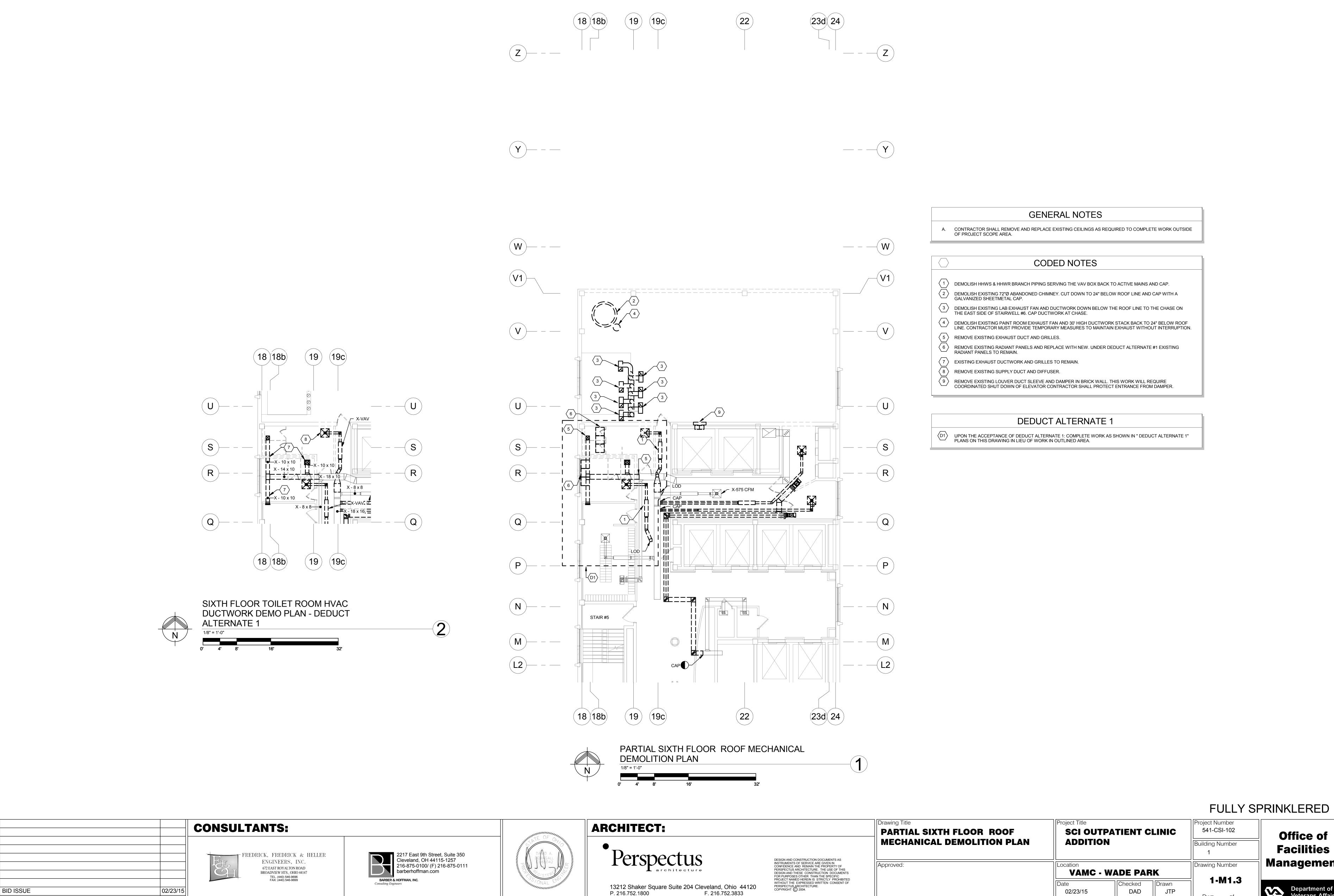


BID ISSUE

Revisions:



Revisions:

VA FORM 08-6231, OCT 1978

Date

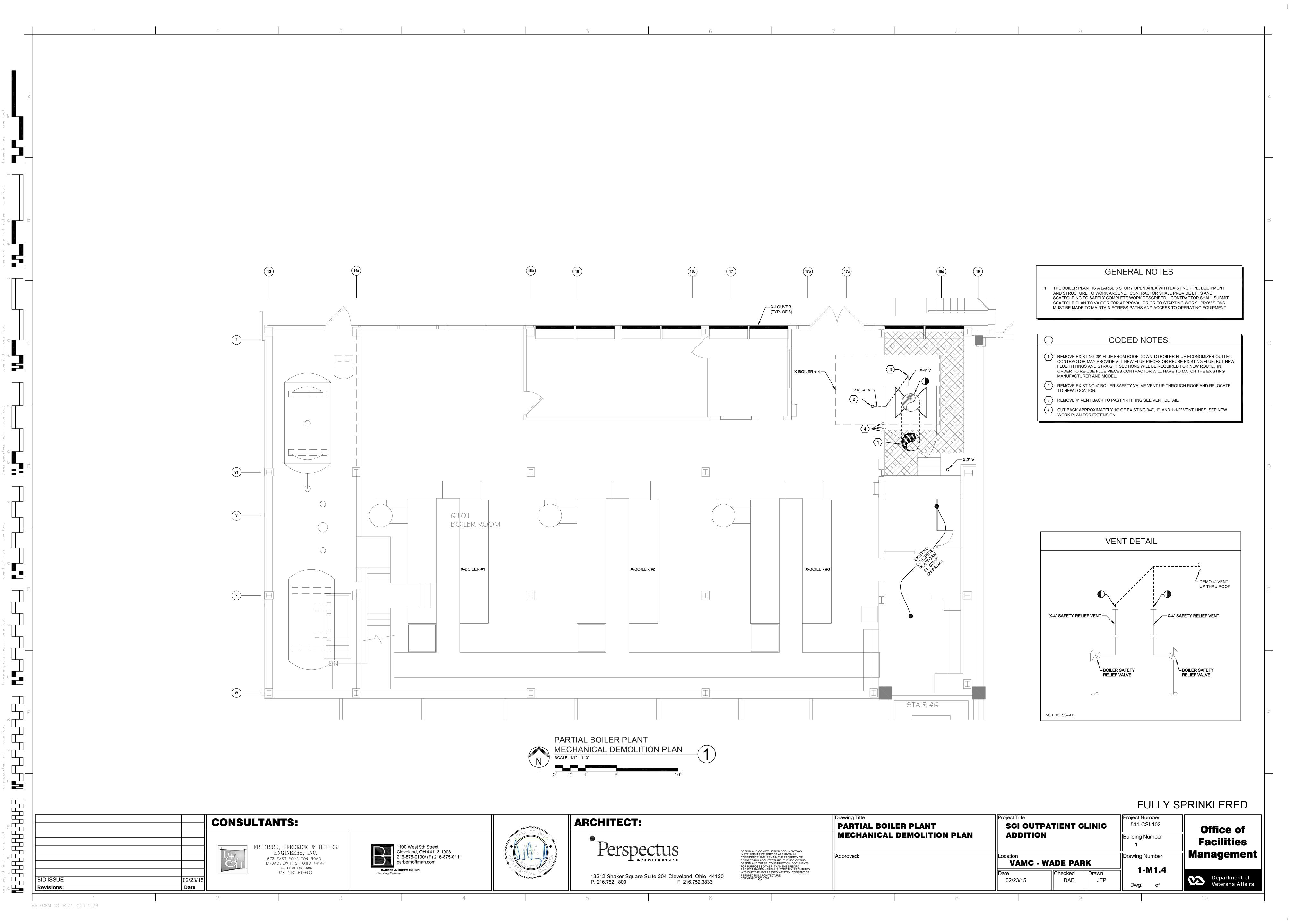
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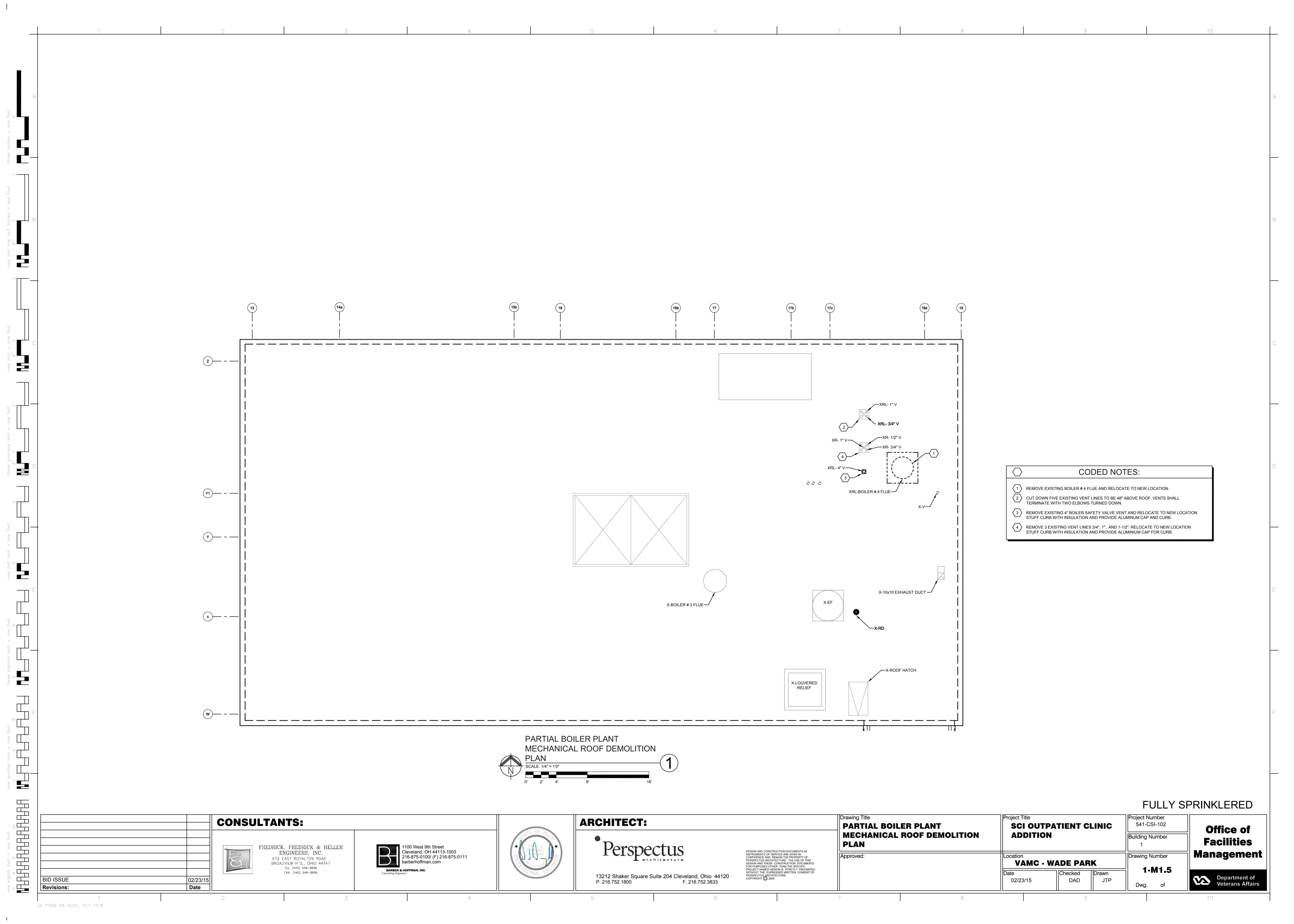
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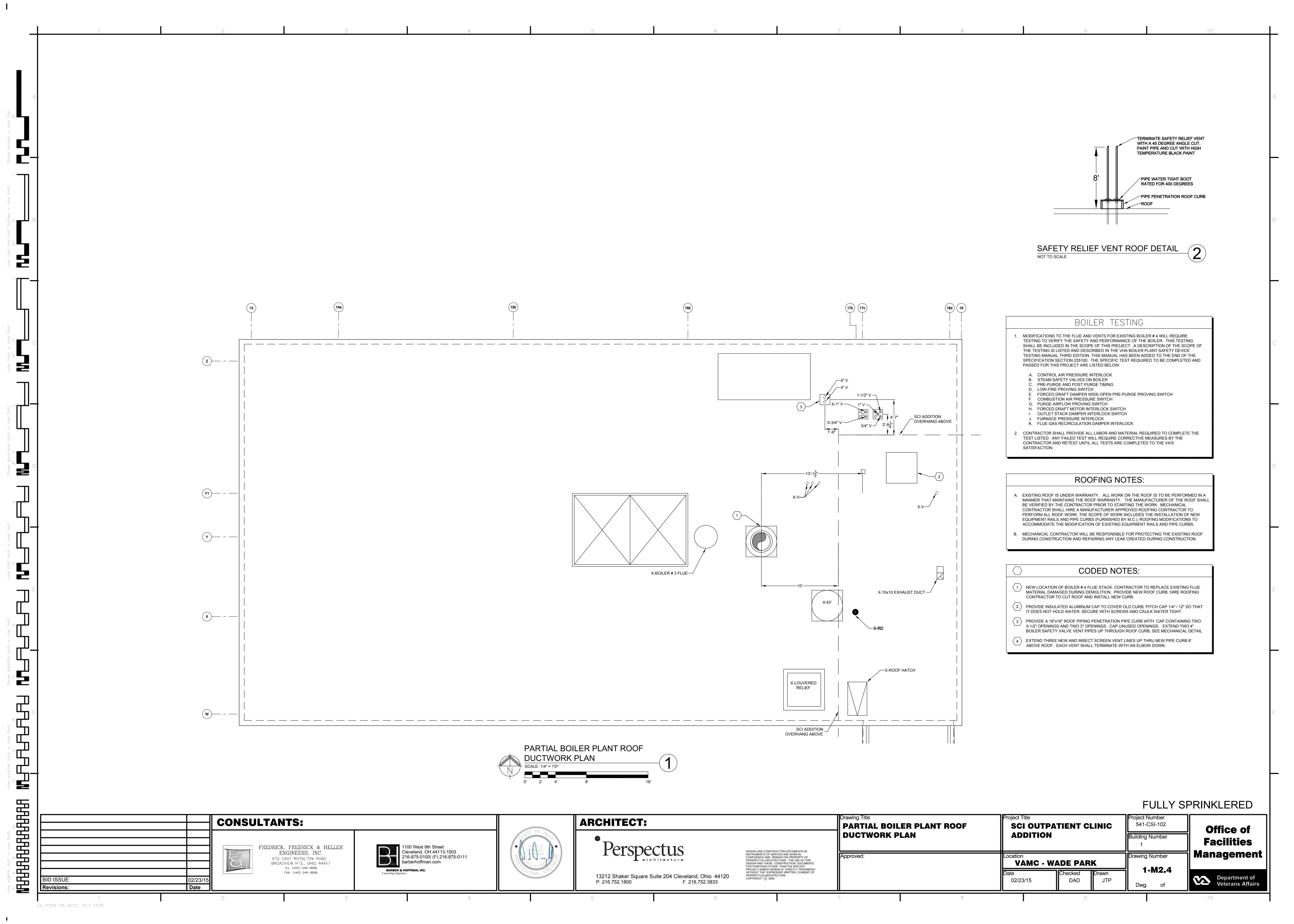
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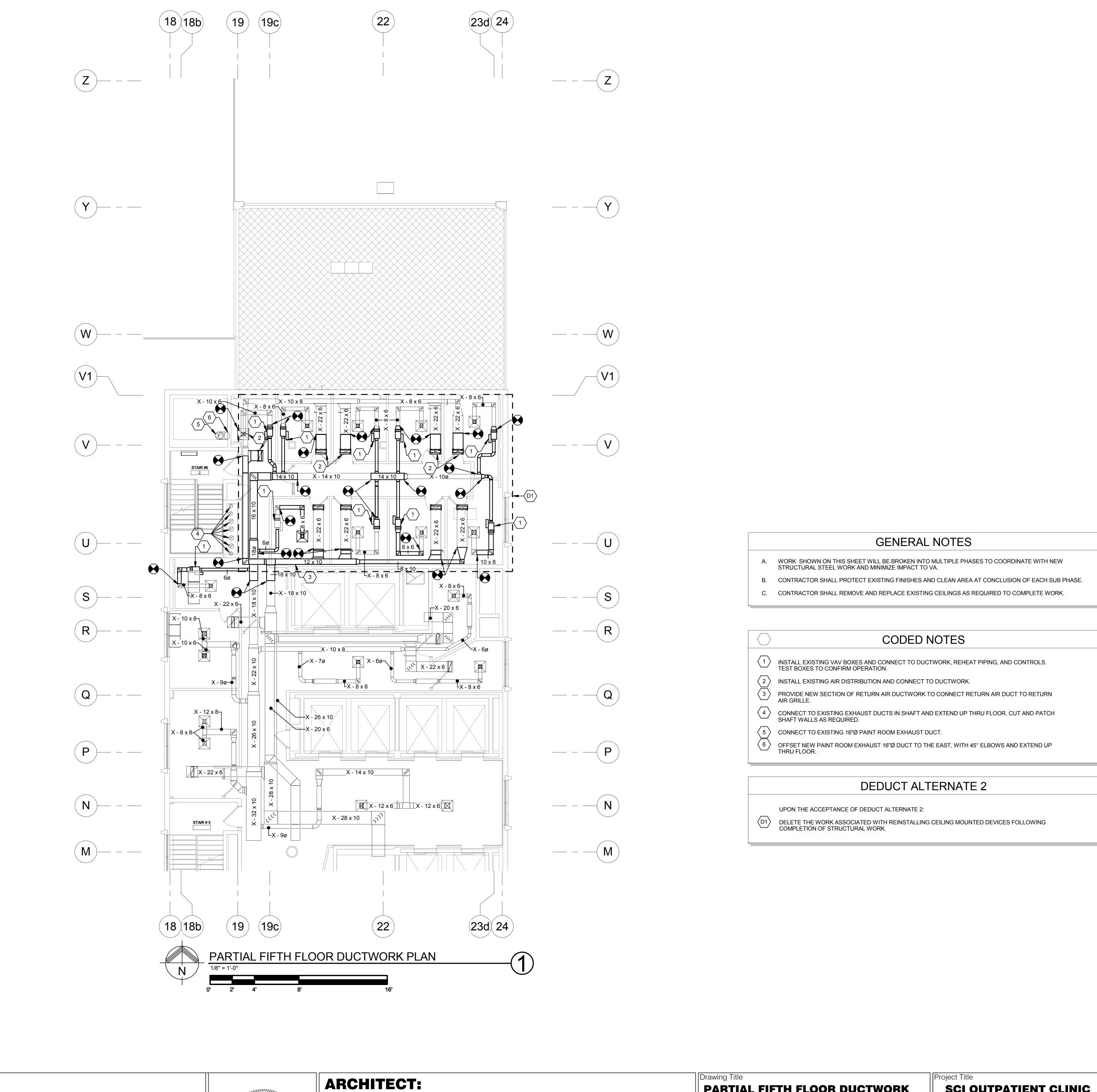
Department of Veterans Affairs

Dwg.









CONSULTANTS:

FREDRICK, FREDRICK & HELLER
ENGINEERS, INC.
672 EAST ROYALTON ROAD
BROADVIEW HITS, OHIO 44147
TEL. (440) 546-9699
FAX: (440) 546-9699

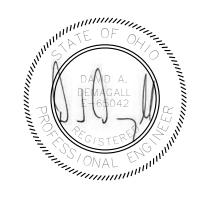
BID ISSUE
Revisions:
Date

VA FORM 08-6231, OCT 1978

2217 East 9th Street, Suite 350 Cleveland, OH 44115-1257 216-875-0100/ (F) 216-875-0111 barberhoffman.com

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Consulting Engineers



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P. 216.752.1800

F. 216.752.3833

PARTIAL FIFTH FLOOR DUCTWORK PLAN

Approved:

SCI OUTPATIENT CLINIC
ADDITION

Location
VAMC - WADE PARK

Checked

DAD

02/23/15

Drawn

JTP

Project Number
541-CSI-102

Building Number
1

Drawing Number

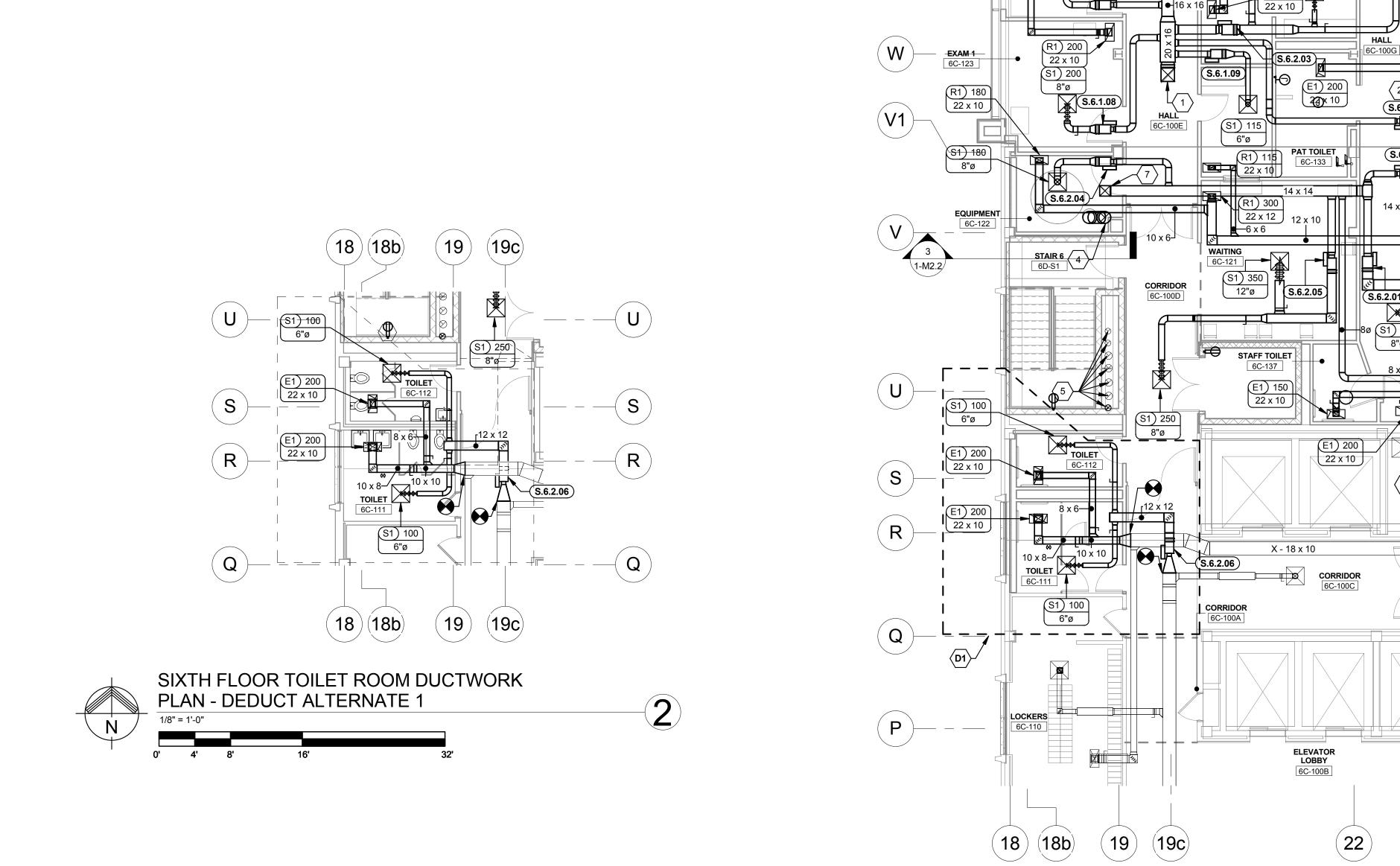
Management

1-M2.1

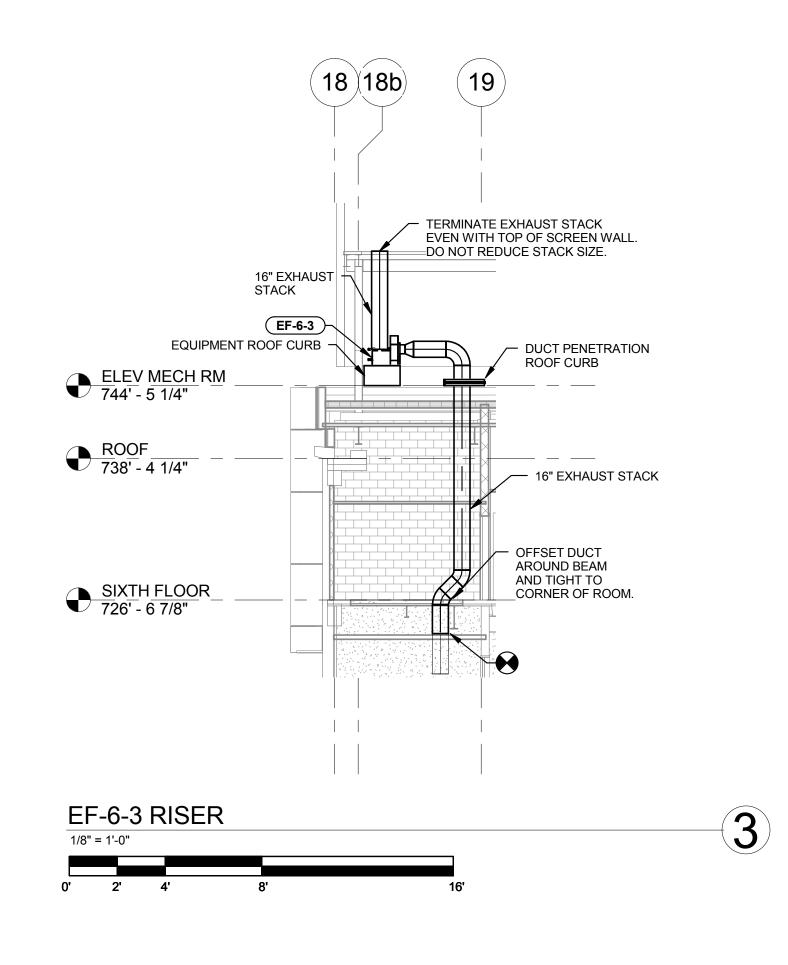
Dwg.

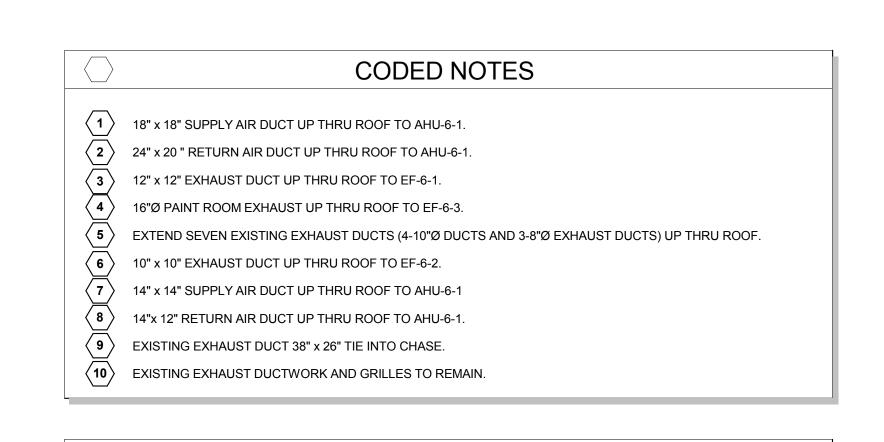
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Department of Veterans Affairs



VA FORM 08-6231, OCT 1978





DEDUCT ALTERNATE 1 UPON THE ACCEPTANCE OF DEDUCT ALTERNATE 1: COMPLETE WORK AS SHOWN IN "DEDUCT ALTERNATE 1" PLANS ON THIS DRAWING IN LIEU OF WORK IN OUTLINED AREA

FULLY SPRINKLERED

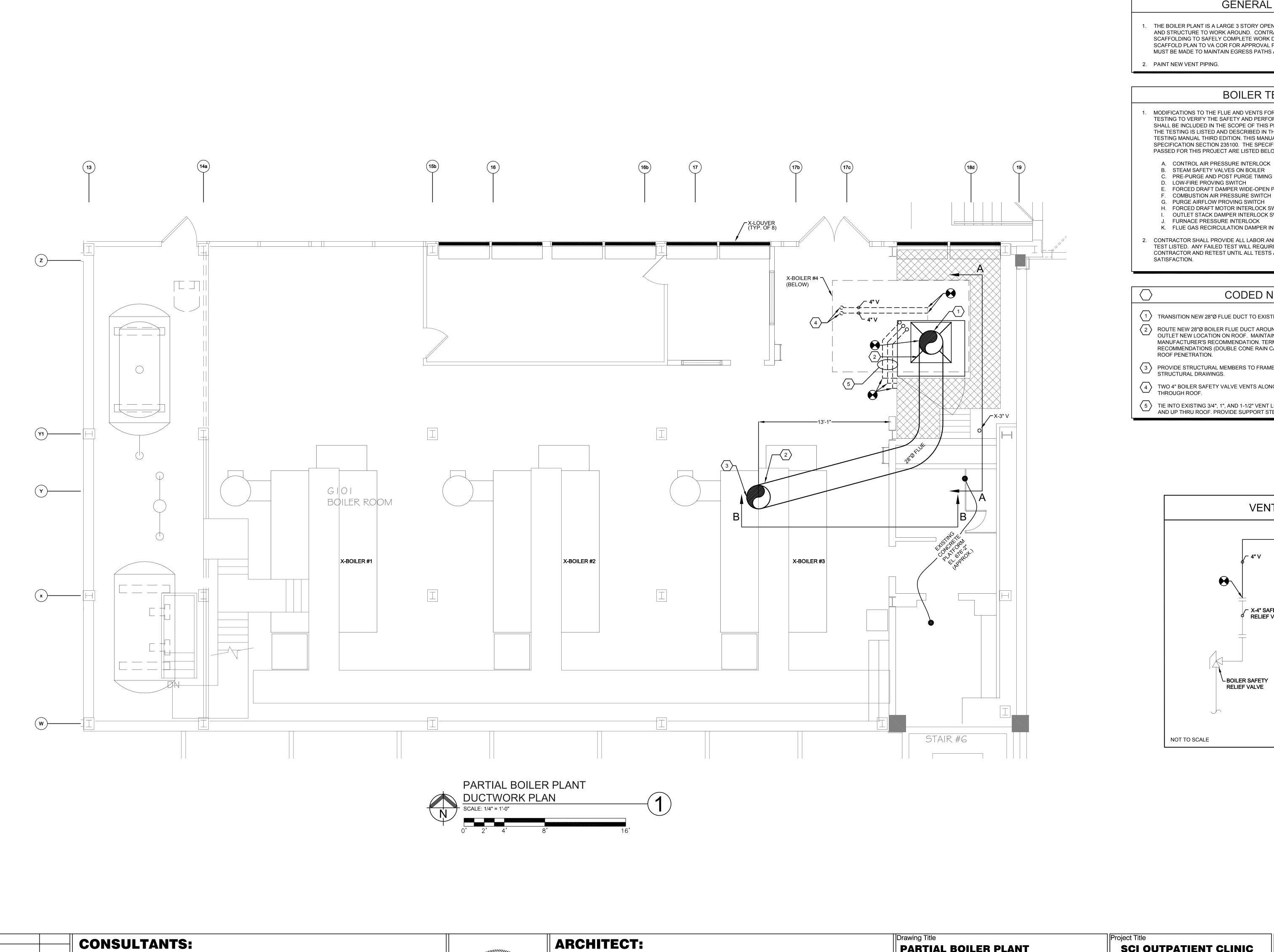
Drawing Title Project Title Project Number **CONSULTANTS: ARCHITECT:** 541-CSI-102 **PARTIAL SIXTH FLOOR DUCTWORK** SCI OUTPATIENT CLINIC Office of **PLAN ADDITION** Building Number **Facilities** 2217 East 9th Street, Suite 350 Cleveland, OH 44115-1257 216-875-0100/ (F) 216-875-0111 barberhoffman.com

BARBER & HOFFMAN, INC.

Consulting Engineers FREDRICK, FREDRICK & HELLER DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE. COPYRIGHT © 2004. Management ENGINEERS, INC. Drawing Number Approved: 672 EAST ROYALTON ROAD **VAMC - WADE PARK** BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696 FAX: (440) 546-9699 1-M2.2 Drawn Checked 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 Department of Veterans Affairs 02/23/15 **BID ISSUE** 02/23/15 DAD JTP P. 216.752.1800 F. 216.752.3833 Date Dwg. **Revisions:**

PARTIAL SIXTH FLOOR DUCTWORK PLAN

(23d)(24



GENERAL NOTES

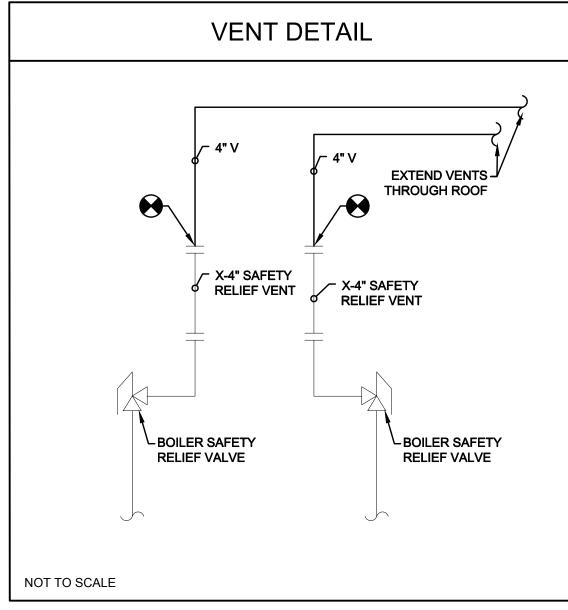
- 1. THE BOILER PLANT IS A LARGE 3 STORY OPEN AREA WITH EXISTING PIPE, EQUIPMENT AND STRUCTURE TO WORK AROUND. CONTRACTOR SHALL PROVIDE LIFTS AND SCAFFOLDING TO SAFELY COMPLETE WORK DESCRIBED. CONTRACTOR SHALL SUBMIT SCAFFOLD PLAN TO VA COR FOR APPROVAL PRIOR TO STARTING WORK. PROVISIONS MUST BE MADE TO MAINTAIN EGRESS PATHS AND ACCESS TO OPERATING EQUIPMENT.
- 2. PAINT NEW VENT PIPING.

BOILER TESTING

- . MODIFICATIONS TO THE FLUE AND VENTS FOR EXISTING BOILER # 4 WILL REQUIRE TESTING TO VERIFY THE SAFETY AND PERFORMANCE OF THE BOILER. THIS TESTING SHALL BE INCLUDED IN THE SCOPE OF THIS PROJECT. A DESCRIPTION OF THE SCOPE OF THE TESTING IS LISTED AND DESCRIBED IN THE VHA BOILER PLANT SAFETY DEVICE TESTING MANUAL THIRD EDITION. THIS MANUAL HAS BEEN ADDED TO THE END OF THE SPECIFICATION SECTION 235100. THE SPECIFIC TEST REQUIRED TO BE COMPLETED AND PASSED FOR THIS PROJECT ARE LISTED BELOW:
 - A. CONTROL AIR PRESSURE INTERLOCK B. STEAM SAFETY VALVES ON BOILER
 - . PRE-PURGE AND POST PURGE TIMING
 - . FORCED DRAFT DAMPER WIDE-OPEN PRE-PURGE PROVING SWITCH
 - G. PURGE AIRFLOW PROVING SWITCH
 - H. FORCED DRAFT MOTOR INTERLOCK SWITCH
 - I. OUTLET STACK DAMPER INTERLOCK SWITCH J. FURNACE PRESSURE INTERLOCK
 - K. FLUE GAS RECIRCULATION DAMPER INTERLOCK
- 2. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED TO COMPLETE THE TEST LISTED. ANY FAILED TEST WILL REQUIRE CORRECTIVE MEASURES BY THE CONTRACTOR AND RETEST UNTIL ALL TESTS ARE COMPLETED TO THE VA'S

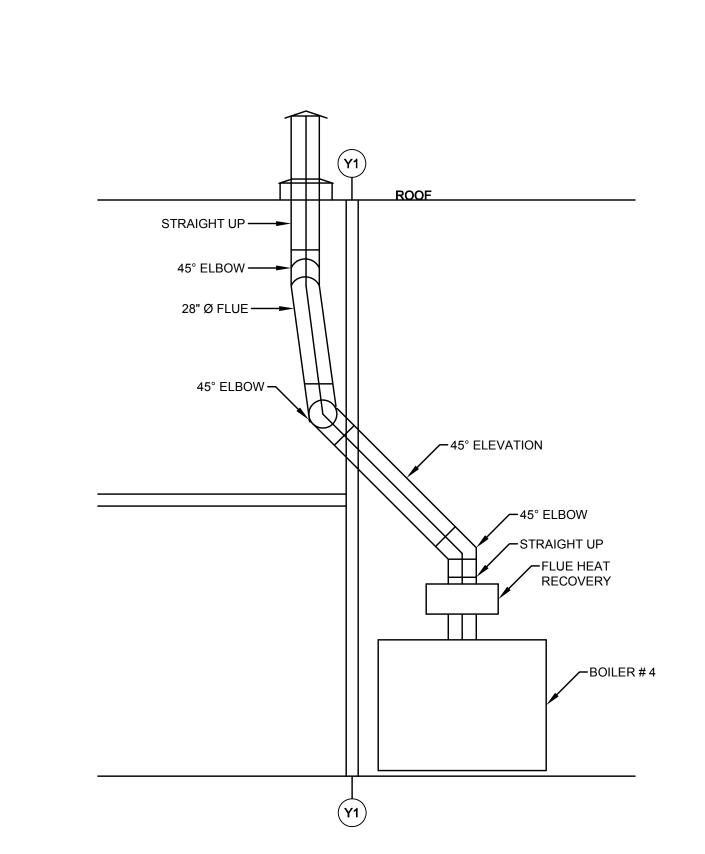
CODED NOTES:

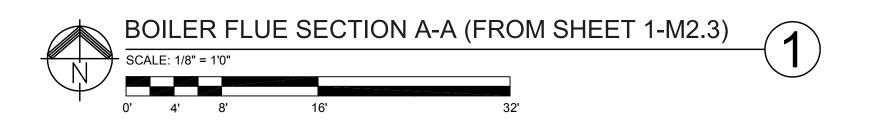
- 1 TRANSITION NEW 28"Ø FLUE DUCT TO EXISTING BOILER # 4 ECONOMIZER OUTLET.
- ROUTE NEW 28"Ø BOILER FLUE DUCT AROUND COLUMNS FROM BOILER TO 34"Ø FLUE OUTLET NEW LOCATION ON ROOF. MAINTAIN CLEARANCE TO COMBUSTIBLES PER MANUFACTURER'S RECOMMENDATION. TERMINATE FLUE PER FLUE MANUFACTURER'S RECOMMENDATIONS (DOUBLE CONE RAIN CAP). PROVIDE FLASHING AS REQUIRED AT
- PROVIDE STRUCTURAL MEMBERS TO FRAME NEW ROOF PENETRATION. SEE STRUCTURAL DRAWINGS.
- TWO 4" BOILER SAFETY VALVE VENTS ALONG MEZZANINE STEEL AND UP ROUTED UP THROUGH ROOF.
- TIE INTO EXISTING 3/4", 1", AND 1-1/2" VENT LINES AND OFFSET UP TO NEW PIPE CURB AND UP THRU ROOF. PROVIDE SUPPORT STEEL.

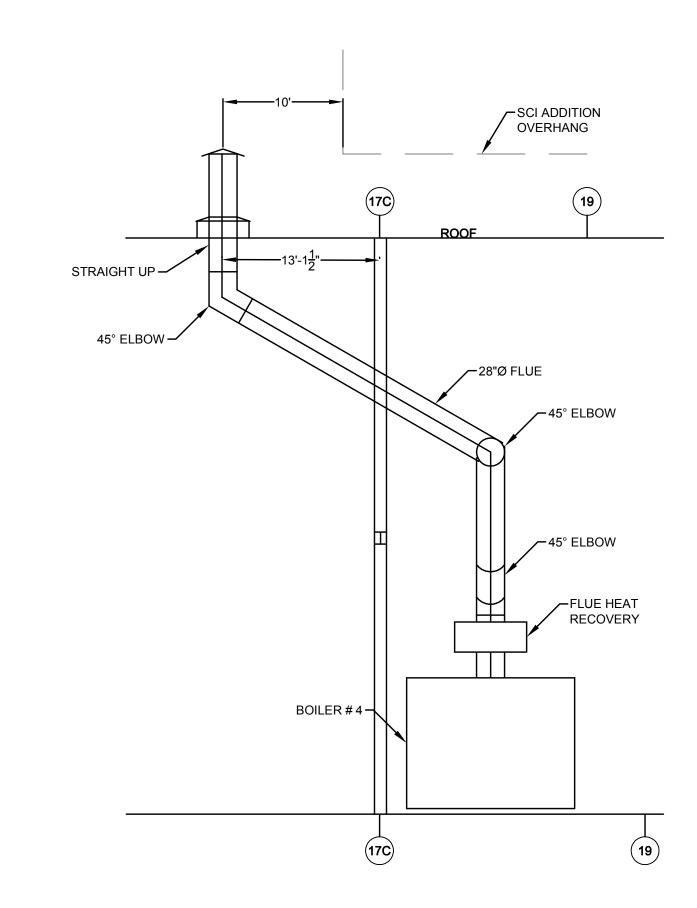


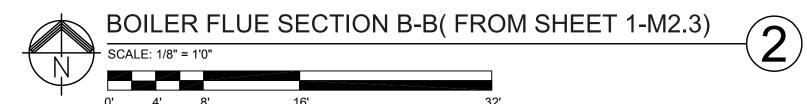
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	CONSULTANTS:	WINDOWN CO.	ARCHITECT:	Drawing Title PARTIAL BOILER PLANT	Project Title SCI OUTPATIENT CLINIC	Project Number 541-CSI-102	Office of
	FREDRICK, FREDRICK & HELLER 1100 West 9th Street	DAMP A.	Perspectify Design and Construction	DUCTWORK PLAN	ADDITION	Building Number 1	Facilities
	ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL. (440) 546–9696	TO STERN COMMITTEE	DESIGN AND CONSTRUCTION INSTRUMENTS OF SERVICE. CONFIDENCE AND REMAIN' PERSPECTUS ARCHITECTUR DESIGN AND THESE CONST FOR PURPOSES OTHER THAT	ARE GIVEN IN THE PROPERTY OF Approved:	Location VAMC - WADE PARK	Drawing Number	Management
BID ISSUE 02/23/15 Revisions: Date	FAX: (440) 546–9699 BARBER & HOFFMAN, INC. Consulting Engineers	====/ONAL ENIMIN	13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833	WRITTEN CONSENT OF RE.	Date 02/23/15 Checked Drawn JTP	1-M2.3 Dwg. of	Department of Veterans Affairs







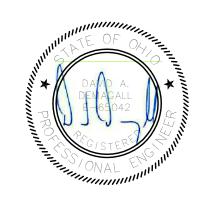


16 16 **CONSULTANTS:** 02/23/15 BID ISSUE Date **Revisions:**

FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696

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1100 West 9th Street Cleveland, OH 44113-1003 216-875-0100/ (F) 216-875-0111 oarberhoffman.com BARBER & HOFFMAN, INC.



ARCHITECT: Perspectus

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BOILER FLUE SECTIONS Approved:

Drawing Title

Project Title Project Number . 541-CSI-102 SCI OUTPATIENT CLINIC **ADDITION** Building Number Drawing Number **VAMC - WADE PARK**

Office of **Facilities** Management

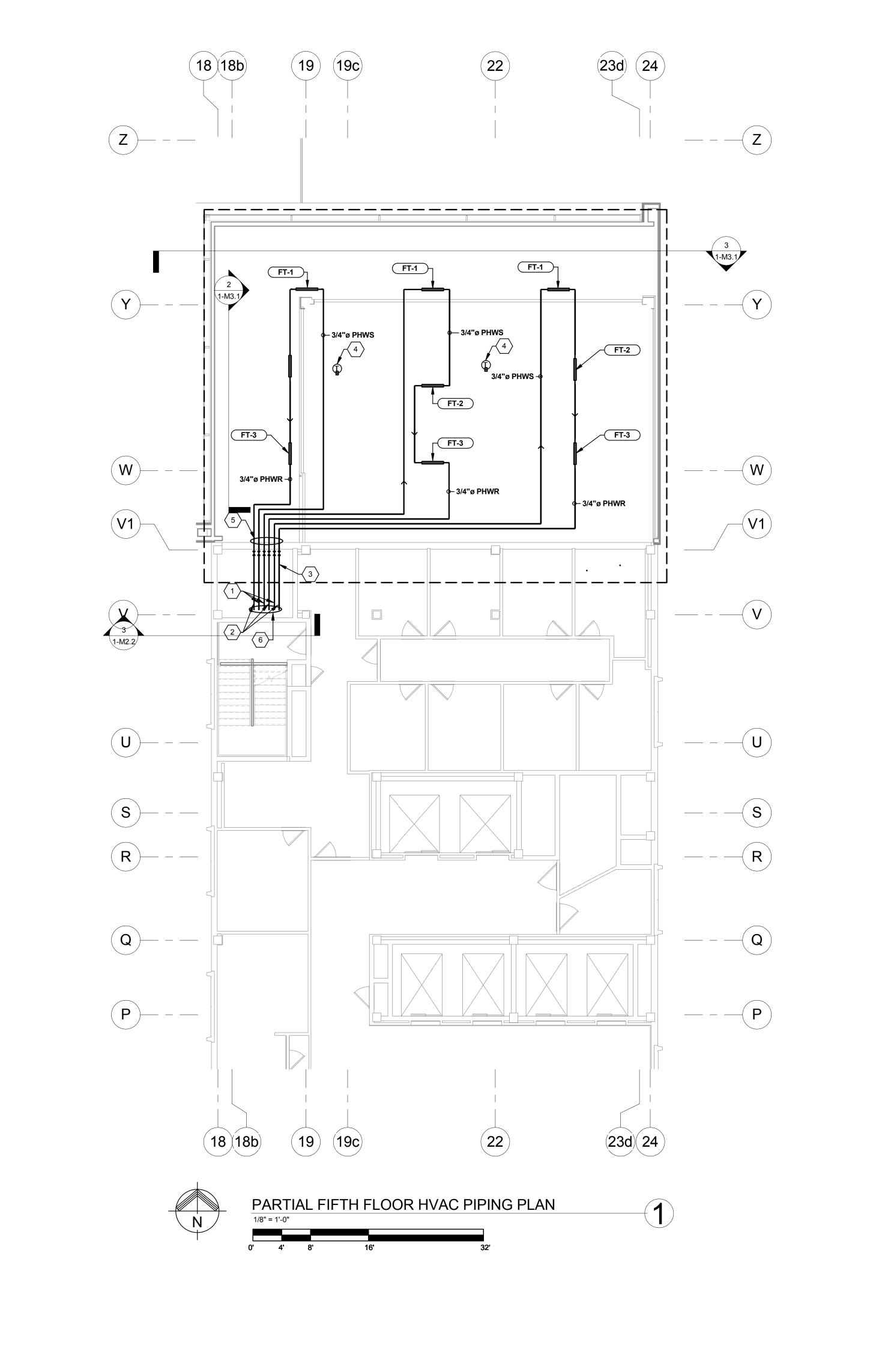
Department of Veterans Affairs

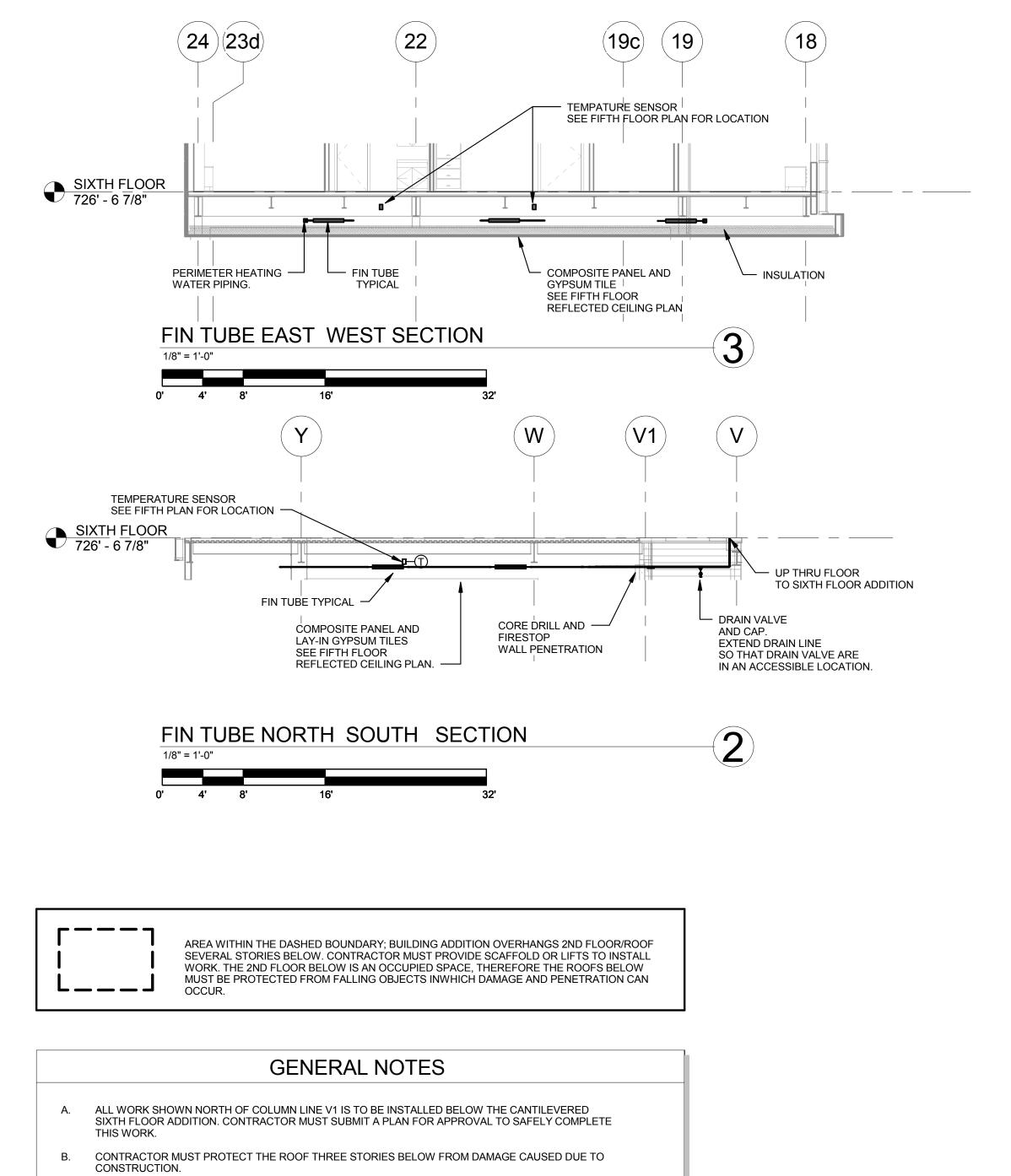
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13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833

Checked DAD Drawn 02/23/15 JSS

1-M2.5 Dwg. of





CODED NOTES

TEMPERATURE SENSORS ARE TO BE MOUNTED 2" BELOW STRUCTURE STEEL BEAM AND LOCATED NEAR ACCESS DOORS. COORDINATE WITH ARCHITECTURAL FLOOR PLAN.

 \langle 5 \rangle CORE DRILL THRU EXISTING EXTERIOR WALL. FIRE STOP PENETRATION. SIX PENETRATIONS TOTAL.

 \langle 1 \rangle 3/4" PHWS UP THRU FLOOR. COORDINATE WITH ARCHITECTURAL FLOOR PLAN.

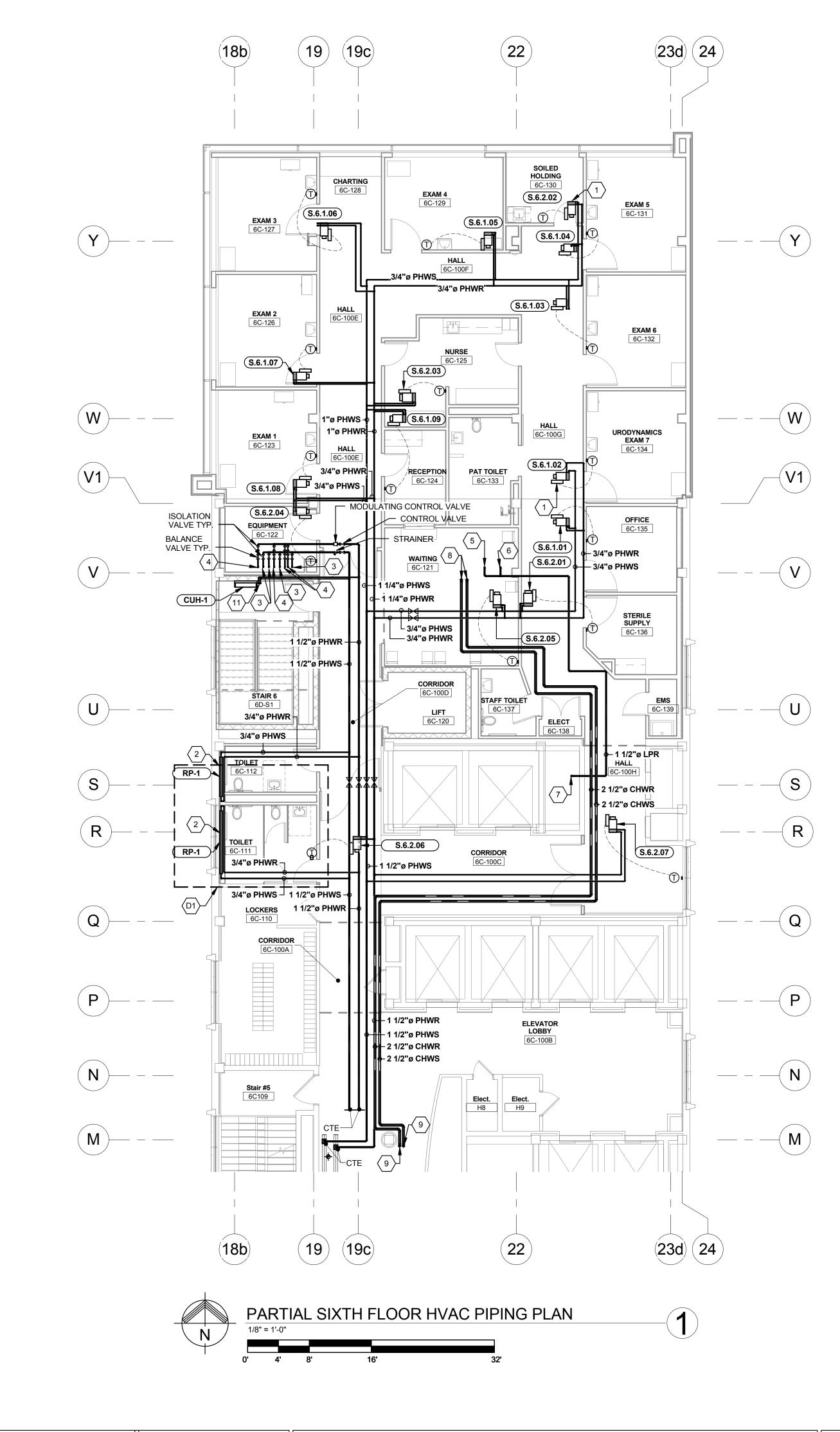
 $\langle 2 \rangle$ 3/4" PHWR UP THRU FLOOR. COORDINATE WITH ARCHITECTURAL FLOOR PLAN.

 \langle 3 \rangle PROVIDE 3/4" DRAIN VALVES WITH HOSE ADAPTORS AND CAPS FOR EACH LINE, SIX TOTAL.

6 CORE DRILL THRU EXISTING FLOOR. FIRE STOP PENETRATION. SIX PENETRATIONS TOTAL.

FULLY SPRINKLERED

Drawing Title Project Title Project Number **CONSULTANTS: ARCHITECT:** 541-CSI-102 PARTIAL FIFTH FLOOR HVAC SCI OUTPATIENT CLINIC Office of **PIPING PLAN ADDITION** Building Number **Facilities** 2217 East 9th Street, Suite 350 Cleveland, OH 44115-1257 216-875-0100/ (F) 216-875-0111 barberhoffman.com FREDRICK, FREDRICK & HELLER DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE. COPYRIGHT © 2004. Management ENGINEERS, INC. Drawing Number Approved: 672 EAST ROYALTON ROAD **VAMC - WADE PARK** BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696 FAX: (440) 546-9699 1-M3.1 Drawn Checked 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 Department of Veterans Affairs 02/23/15 **BID ISSUE** 02/23/15 DAD JTP P. 216.752.1800 F. 216.752.3833 Date Dwg. **Revisions:**



GENERAL NOTES

A. ALL HEATING HOT WATER PIPING 3/4" UNLESS OTHERWISE NOTED.

B. PROVIDE ISOLATION VALVES AT EACH BRANCH OFF THE MAINS.

C. REMOVE AND REPLACE CEILINGS IN SPACES OUTSIDE OF PROJECT AREA TO ACCOMMODATE NEW WORK.

CODED NOTES

1 PROVIDE 3-WAY CONTROL VALVE FOR VAV-BOX REHEAT COIL.

PROVIDE NEW RADIANT PANELS. RADIANT PANELS SHALL RUN CONTINUOUS FROM WALL TO WALL. CONTRACTOR SHALL FIELD MEASURE EACH ROOM AND ORDER CUSTOM LENGTHS TO FIT. UNDER DEDUCT ALTERNATE #1 EXISTING RADIANT PANELS TO REMAIN. REMOVE NEW RADIANT PANELS FROM

1" PHWS DOWN THRU FLOOR IN THREE PLACES. PROVIDE ISOLATION VALVES AND AIR VENTS FOR EACH PIPE.

1" PHWR DOWN THRU FLOOR IN THREE PLACES. PROVIDE ISOLATION VALVES AND AIR VENT FOR EACH PIPE.

5 3/4" STEAM CONDENSATE UP THRU ROOF TO AHU HUMIDIFIER.

 \langle f 6 angle $\,$ 3/4" STEAM CONDENSATE UP THRU ROOF TO AHU STEAM PREHEAT COIL.

3/4" LOW PRESSURE STEAM CONDENSATE TIE INTO EXISTING 3/4" LOW PRESSURE RETURN. FIRESTOP SHAFT PENETRATION PER DETAILS ON 1-M5.5. CUT AND PATCH EXISTING SHAFT AS REQUIRED FOR

2 1/2" CHILLED WATER SUPPLY AND RETURN UP THRU ROOF TO SERVE AIR HANDLING UNIT COOLING COIL.

2 1/2" CHILLED WATER SUPPLY AND RETURN UP THRU FLOOR TO PENTHOUSE. SEE ROOF PLAN FOR CONTINUATION. ROUTE AS HIGH AS POSSIBLE IN CEILING SPACE.

(10) IF DEDUCT ALTERNATE #1 IS ACCEPTED EXISTING RADIANT CEILING PANEL TO REMAIN.

3/4" HHWS & HHWR DOWN IN WALL TO CUH-1.

DEDUCT ALTERNATE 1

UPON THE ACCEPTANCE OF DEDUCT ALTERNATE 1:

COMPLETE WORK AS SHOWN IN "DEDUCT ALTERNATE 1" PLANS ON THIS DRAWING IN LIEU OF WORK IN OUTLINED AREA

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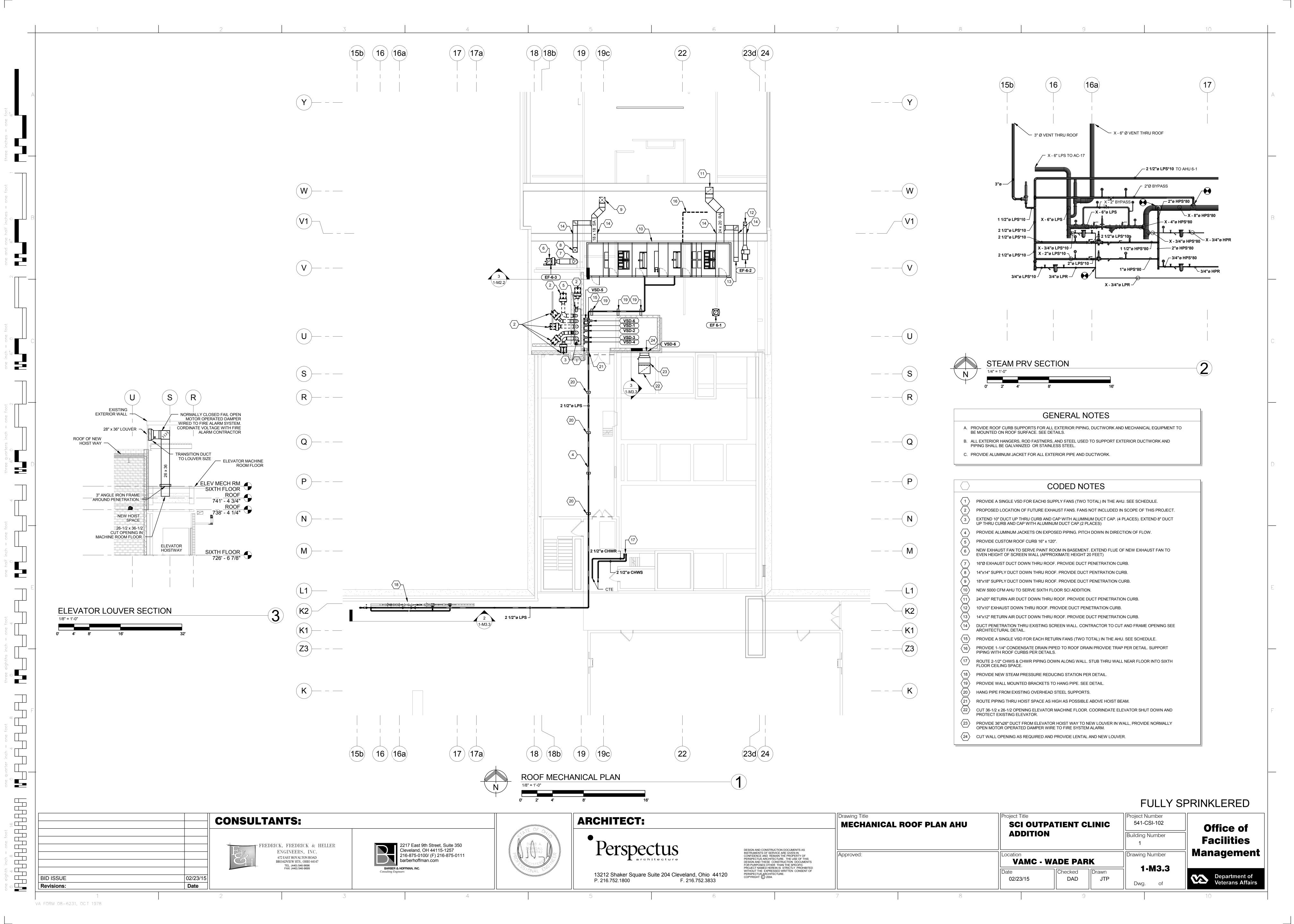
Drawing Title Project Title Project Number **CONSULTANTS: ARCHITECT:** 541-CSI-102 SCI OUTPATIENT CLINIC PARTIAL SIXTH FLOOR HVAC Office of **PIPING PLAN ADDITION** Building Number **Facilities** 2217 East 9th Street, Suite 350 Cleveland, OH 44115-1257 216-875-0100/ (F) 216-875-0111 barberhoffman.com

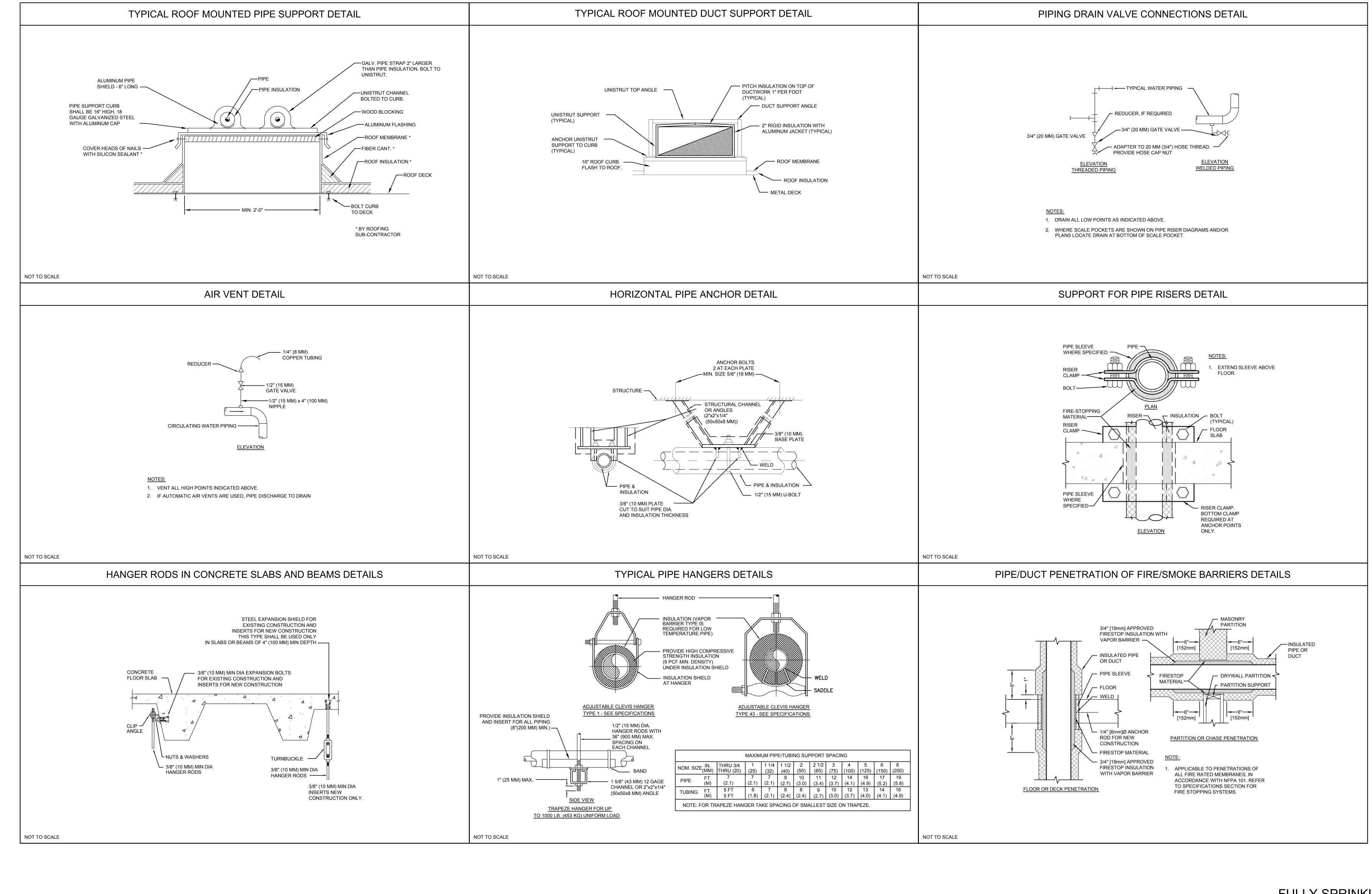
BARBER & HOFFMAN, INC.

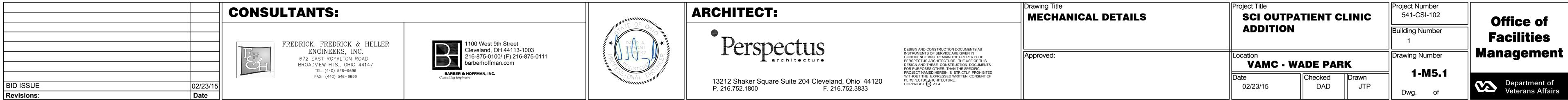
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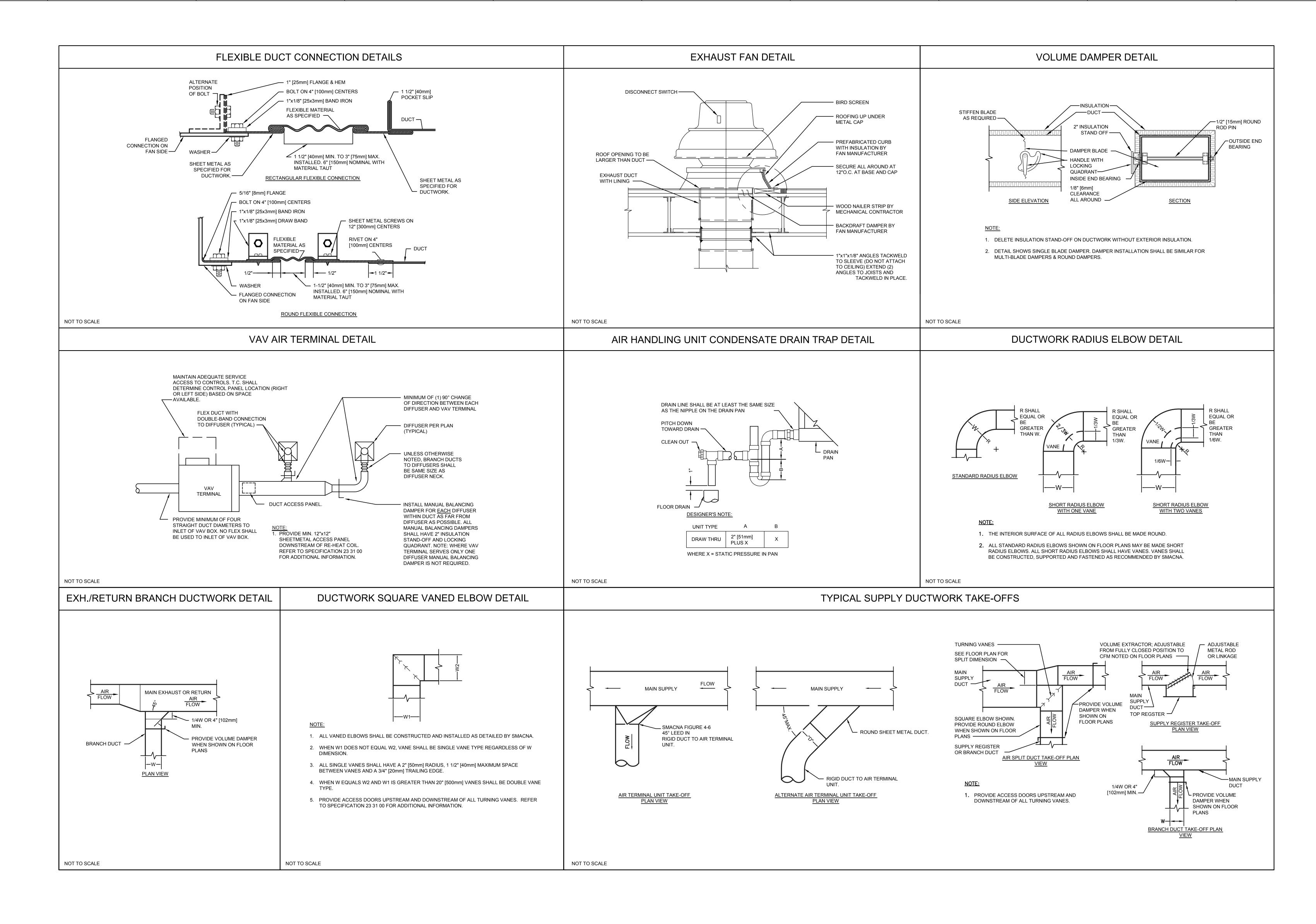
SIXTH FLOOR TOILET ROOM HVAC PIPING

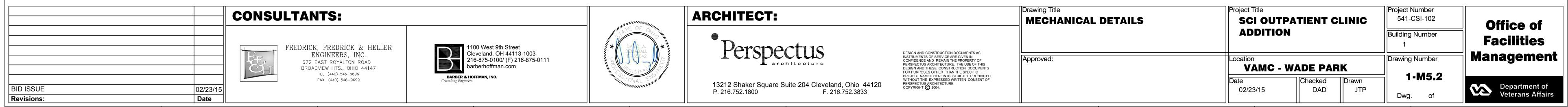
PLAN - DEDUCT ALTERNATE 1

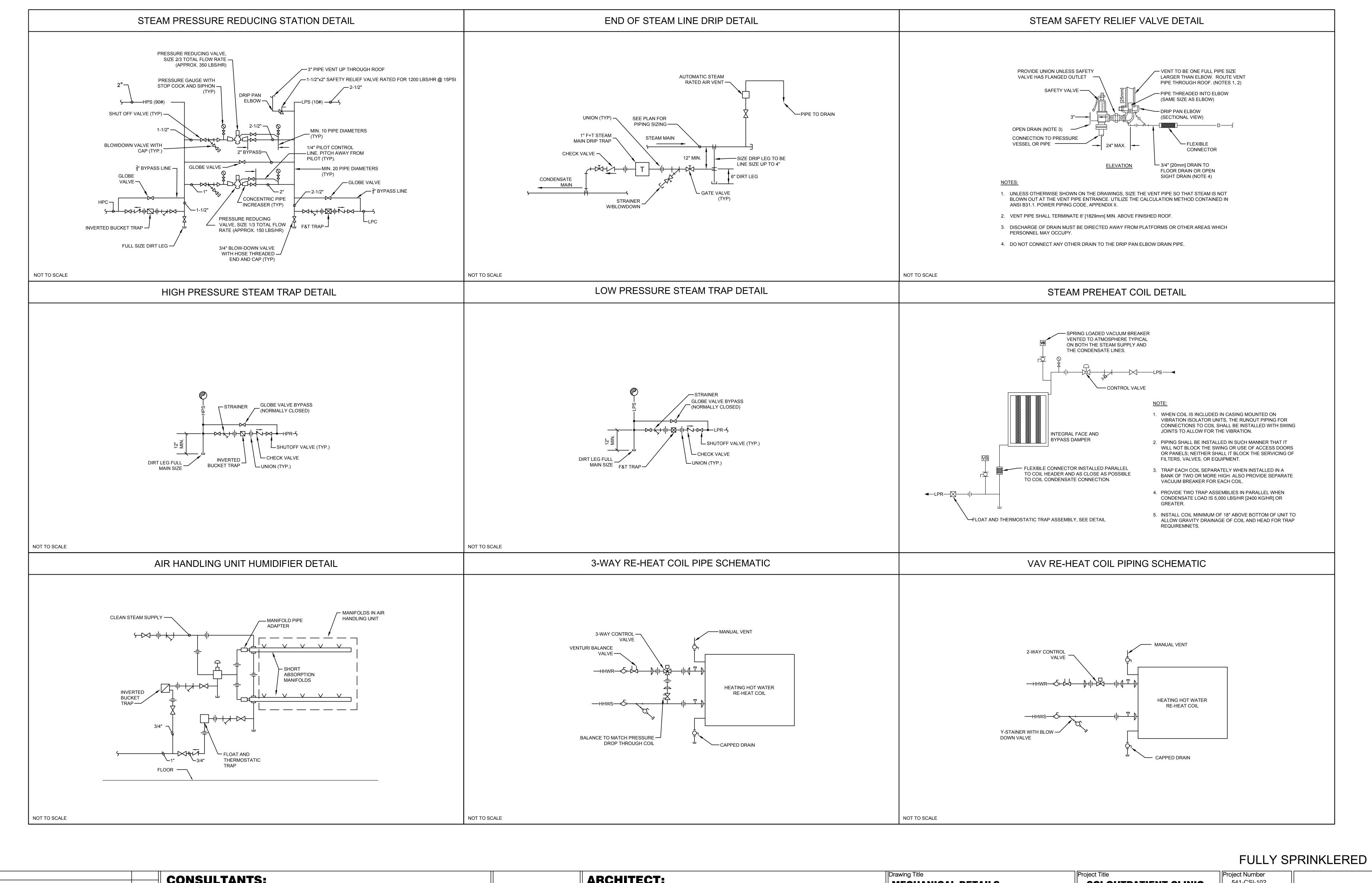




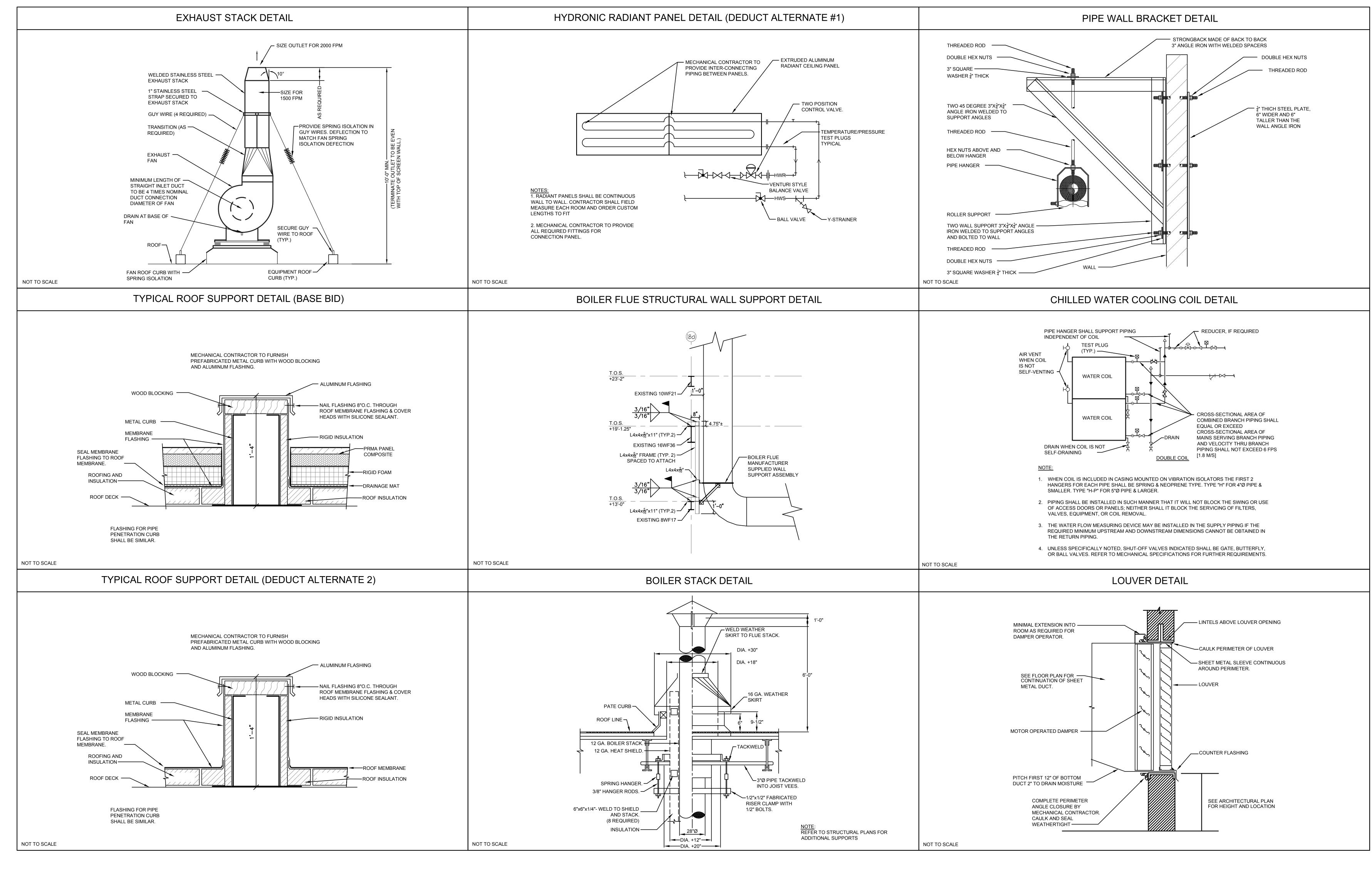




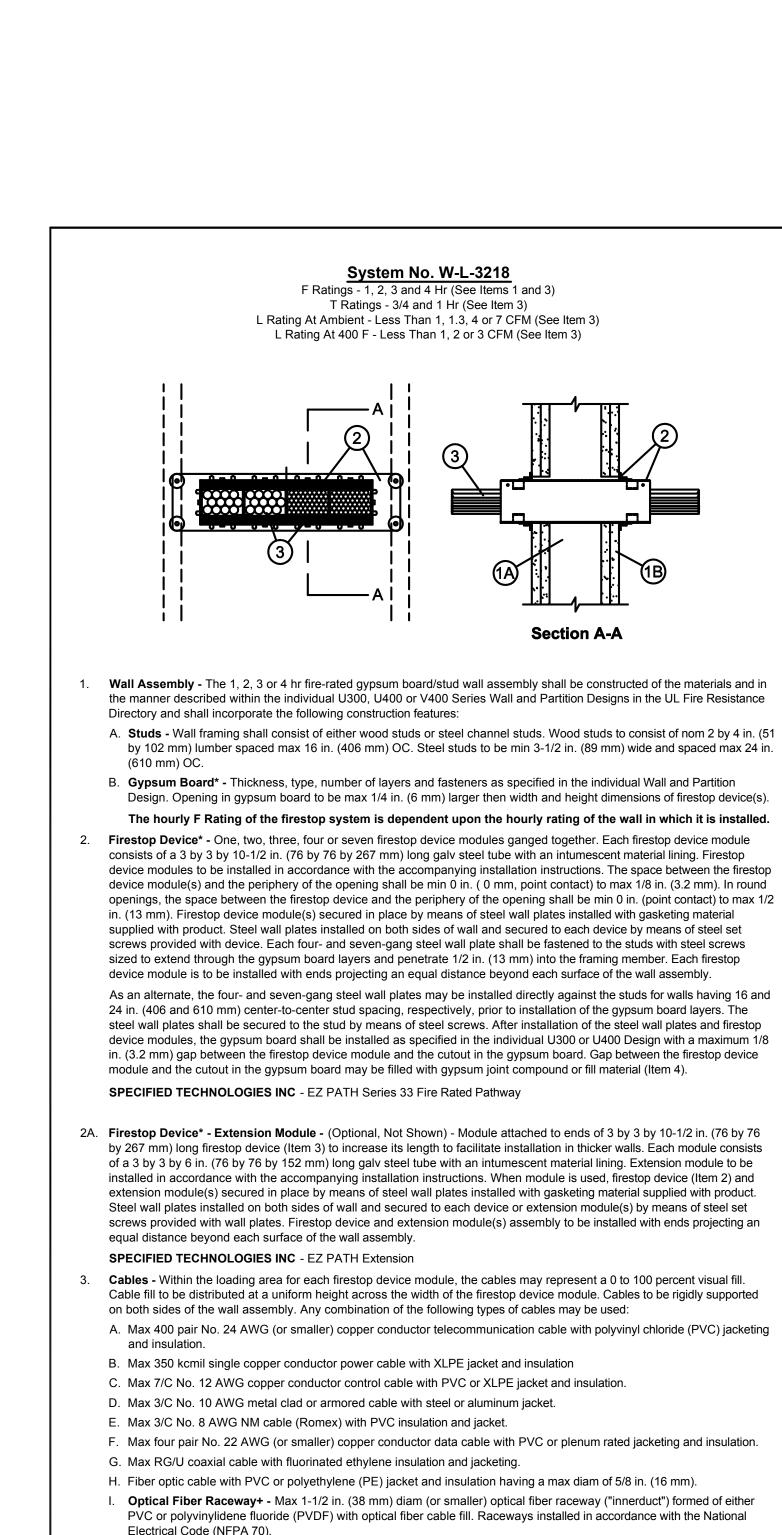




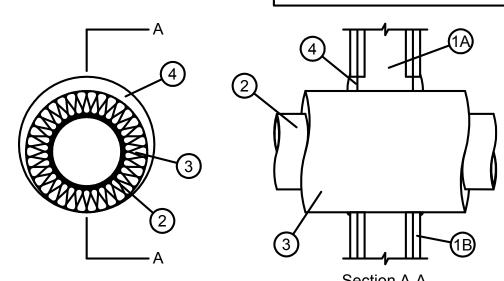
ARCHITECT: CONSULTANTS: 541-CSI-102 SCI OUTPATIENT CLINIC MECHANICAL DETAILS Office of **ADDITION** Building Number **Facilities** 1100 West 9th Street Cleveland, OH 44113-1003 216-875-0100/ (F) 216-875-01 barberhoffman.com FREDRICK, FREDRICK & HELLER DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF PERSPECTUS ARCHITECTURE. COPYRIGHT (2004. Management ENGINEERS, INC. Drawing Number 216-875-0100/ (F) 216-875-0111 ||Approved: 672 EAST ROYALTON ROAD L architecture **VAMC - WADE PARK** BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696 1-M5.3 BARBER & HOFFMAN, INC. Checked FAX: (440) 546-9699 Drawn 13212 Shaker Square Suite 204 Cleveland, Ohio 44120 P. 216.752.1800 F. 216.752.3833 Department of Veterans Affairs **BID ISSUE** 02/23/15 02/23/15 DAD JTP Dwg. Date Revisions:



	CONSULTANTS:		ullillinining.	ARCHITECT:		Drawing Title MECHANICAL DETAILS	Project Title SCI OUTPATIENT CLINIC	Project Number 541-CSI-102	Office of
	FREDRICK, FREDRICK & HELLER	1100 West 9th Street	DAMD A.	Derenectus			ADDITION	Building Number 1	Facilities
	ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696	Cleveland, OH 44113-1003 216-875-0100/ (F) 216-875-0111 barberhoffman.com	1 65042 ACTION OF THE PARTY OF	Perspectus	DESIGN AND CONSTRUCTION DOCUMENTS AS INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENTS FOR PURPOSES OTHER THAN THE SPECIFIC PROJECT NAMED HEREIN IS STRICTLY PROHIBITED.	Approved:	Location VAMC - WADE PARK	Drawing Number 1-M5.4	Management
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ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1 Hr	FT Rating - 1 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 1 Hr
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features: A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 B. Gypsum Board* - 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, thickness,

number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 18 in. (457 mm). The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is

. Metallic Sleeve - (Optional, Not Shown) - Cylindrical sleeve fabricated from min 0.016 in. (0.41 mm) to max 0.105 in. (2.7 mm) thick sheet steel. Length of steel sleeve to be equal to the thickness of wall. Longitudinal seam of sleeve welded or overlapped min 1 in. (25 mm). The ends of the steel sleeve shall be flush or recessed max 1/4 in. (6 mm) from wall surfaces. Through Penetrants - One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing

A. Steel Pipe - Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Iron Pipe - Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe. C. Copper Tubing - Nom 4 in. (102 mm) diam (or smaller) Type M (or heavier) copper tube.

D. Copper Pipe - Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe. Pipe Coverings* - One of the following types of pipe coverings shall be used:

A. Pipe and Equipment Covering Materials* - Max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between insulated penetrating item and the edge of the through opening shall be min 0 in. (point contact) to See Pipe and Equipment Covering-Materials* - (BRGU) category in the Building Materials Directory for names of

manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used. B. Pipe Covering Materials* - Max 2 in. (51 mm) thick unfaced mineral fiber pipe insulation sized to the outside diam of pipe or tube. Pipe insulation secured with min 18 SWG steel wire spaced max 12 in. (305 mm) OC. The annular space between insulated penetrating item and the edge of the through opening shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm). IIG MINWOOL L L C - High Temperature Pipe Insulation 1200, High Temperature Pipe Insulation BWT or High Temperature

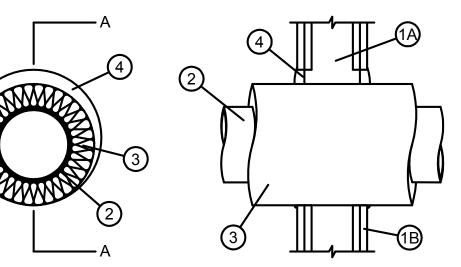
Pine Insulation Thermaloc C. Sheathing Material* - Used in conjunction with Item 3B. Foil-scrim-kraft or all service jacket material shall be wrapped around the outer circumference of the pipe insulation (Item 3B) with the kraft side exposed. Longitudinal joints and transverse joints sealed with metal fasteners or butt tape.

See **Sheathing Materials** (BVDV) category in the Building Materials Directory for names of manufacturers. Any sheathing material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

Fill, Void or Cavity Material* - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At point contact location between insulated through penetrant and gypsum board, a min 3/8 in. (10 mm) bead of fill material shall be applied to the insulated through penetrant/gypsum board interface on both sides of the wall. **SPECIFIED TECHNOLOGIES INC** - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

System No. W-L-5014

CAN/ULC S115	
F Ratings - 1 and 2 Hr (See Item 1)	
FT Rating - 1 Hr	
FH Ratings - 1 and 2 Hr (See Item 1)	
FTH Rating - 1 Hr	
L Rating At Ambient - Less Than 1 CFM/sq ft	



Floor or Wall Assembly - Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or 2-3/4 in. (70 mm) lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Floor may also be constructed of any UL Classified Precast Concrete Units*. Max diam of opening is 32 in.

(813 mm). Max diam of opening in floors constructed of hollow-core precast concrete units is 7 in. (178 mm). See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of Steel Sleeve - (Optional) - Nom 32 in. (813 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve or No. 26 ga (0.022 in. or 0.56 mm thick) sheet steel sleeve with square anchor flange spot welded to the sleeve at approx mid-height. Sleeve cast or grouted in place flush with floor ar wall surfaces. Steel pipe sleeve may project max 3 in. (76 mm) from floor or wall surfaces.

Ratings - 2 and 3 Hr (See Item T Ratings - 2 and 3 Hr (See Item 1) L Rating at Ambient - 1 CFM/sq ft L Rating at 400°F - Less than 1 CFM/sq ft W Rating - Class 1 (See Item 3B)

1. Floor Assembly - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. As an alternate, any min 2 hr fire rated D700, D800 or D300 Series Floor-Ceiling Design in the UL Fire Resistance

See Precast Concrete Units (CFTV) category in Fire Resistance Directory for names of manufacturers. The F and T Ratings are 2 hr when the min thickness of the concrete floor is less than 4-1/2 in. (114 mm).

sides of floor assembly. The following types and sizes of penetrants may be used: A. Steel Pipe - Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe - Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.

3. **Firestop System -** The details of the firestop system shall be as follows:

are used with solid penetrant (not flexible steel conduit).

hollow-core precast concrete units is 7 in. (178 mm).

diam (or smaller) flexible steel conduit.

required thickness of fill material.

SIL300SL Sealant for floors only.

*Bearing the UL Classification Mark

Duct Wrap XL.

Directory having a min 2-1/2 in. (64 mm) thickness of lightweight of normal weight (100-150 pcf or 1600-2400 kg/m3) concrete topping over the steel deck may be used. Floor may also be constructed of any min 6 in. (152 mm) thick hollow core UL Classified Precast Concrete Units*. Max area of opening is 96 sq in. with a max dim of 16 in. Max diam of opening in floor constructed of

2. Through-Penetrant - One or more metallic pipes, conduits or tubing installed concentrically or eccentrically within opening. Pipes conduits, or tubing spaced min 0 in. (0 mm, point contact) to max 1-1/2 in. (38 mm) apart. Annular space between penetrant and

periphery of opening shall be min of 0 in. (0 mm, point contact) to max 2 in. (51 mm). Penetrant to be rigidly supported on both

C. Conduit - Nom 4 in. (152 mm) diam (or smaller) steel conduit or steel electrical metallic tubing (EMT) or nom 1 in. (25 mm)

A. Packing Material - Min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing

material to extend through entire thickness of concrete floor except for recess at top surface of floor to accommodate the

B. Fill, Void or Cavity Materials* - Sealant or Putty - Min 1/2 in. (13 mm) thickness of caulk or putty applied within the annulus,

SPECIFIED TECHNOLOGIES INC - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal

flush with top surface of floor. At point contact, apply min 1/4 in. (6 mm) bead at penetrant/concrete interface on top surface of

Putty, Pensil 300 Sealant or SpecSeal Series SIL300 Sealant for floors or walls and Pensil 300 SL Sealant or SpecSeal Series

W Rating applies only when Pensil 300, SpecSeal Series SIL300, Pensil 300 SL or SpecSeal Series SIL300SL Sealants

above floor. An additional layer of min 1-1/2 in. (38 mm) thick duct wrap tightly wrapped around the first layer of duct wrap to

extend 12 in. (305 mm) above floor. The spaces between penetrants at the top of the duct wrap is to be tightly-packed with a

nominal 2 in. (51 mm) depth of duct wrap material. All longitudinal seams of both layers of duct wrap are sealed with foil tape.

THERMAL CERAMICS INC - FireMaster® Duct Wrap 2x2, FireMaster Duct Wrap 2x2+, FireMaster FastWrap XL, or Pyroscat

C. **Duct Wrap Material* -** Min 1-1/2 in. (38 mm) thick duct wrap tightly wrapped around penetrants to extend 36 in. (914 mm)

<u> Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876</u>

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System No. C-AJ-1240

Ratings - 2 and 3 Hr (See Item 4

T Rating - 0 Hr

L Rating At Ambient - Less Than 1 CFM/sq ft

L Rating at 400 F - Less Than 1 CFM/sq ft

Through Penetrant - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe - Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe - Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe. C. Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or nom 6 in. (152 mm) diam steel conduit.

D. Copper Tubing - Nom 6 in. (152 mm) diam (or smaller) Type M (or heavier) copper tubing. E. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3A. Through Penetrating Product* Flexible Metal Piping - As an alternate to Item 3, one nom 2 in. (51 mm) diam (or smaller) flexible steel pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe and the periphery of the opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Pipe to be rigidly supported on both sides of floor or wall assembly. OMEGA FLEX INC

GASTITE, DIV OF TITEFLEX

WARD MFG L L C

Firestop System - The firestop system shall consist of the following:

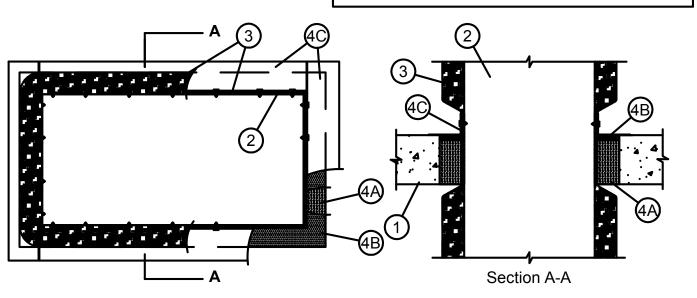
A. Packing Material - Min 2-1/4 in. (57 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Sealant - Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of floor or top of sleeve or with both surfaces of wall assembly or both ends of sleeve. At the point contact location between through penetrant and concrete, a min 1/4 in. (6 mm) diam bead of fill material shall be applied at the concrete/through penetrant interface on the top surface of floor and on both surfaces of wall. Fill material installed symmetrically in floors constructed of hollow-core precast concrete units. SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant. SpecSeal LC 150 Sealant

or SpecSeal LE600 Sealant may be used for 2 hr F Rating only. *Bearing the UL Classification Mark

System No. C-AJ-7143

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Rating - 3/4 Hr	FT Rating - 3/4 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Rating - 2 Hr
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 3/4 Hr
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



Floor or Wall Assembly - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening is 17.8 ft2 (1.65 m2) with

max dimension of 64 in. (1.6 m). See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. . Steel Duct - Max 60 by 36 in. (1524 by 914 mm) steel duct. Steel gauge of duct shall conform with SMACNA requirements. One duct to be centered within the firestop system. The annular space between steel duct and edges of opening shall be min 2 in. (51 mm) to max 2-1/2 in. (64 mm) Steel duct to be rigidly supported on both sides of floor or wall assembly. . Batts and Blankets* - Nom 2 in. (51 mm) thick light density (min 3/4 pcf or 12 kg/m3) glass fiber blanket insulation jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with foil-scrim-kraft tape. Nom annular space between insulated steel duct and periphery of opening to be point contact to max 1/2 in. (13 mm) prior to installation of packing material (Item 4A).

See Batts and Blankets (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread value of 25 or less and a Smoke Developed value of 50 or less may be used.

. **Firestop System -** The firestop system shall consist of the following: A. Packing Material - Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into annular space such that glass fiber blanket insulation on steel duct is compressed to a maximum overall thickness of 1/2 in. (13 mm). Packing material to be recessed from top surface of floor and from both surfaces of wall to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* - Sealant - Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor and both surfaces of wall. SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant, Pensil 300 Sealant or SpecSeal

Series SIL300 Sealant for floors or walls and Pensil 300SL Sealant or SpecSeal Series SIL300SL Sealant for floors only.

C. Retaining Angles - Min 16 ga galv steel angles sized to lap duct a min of 2 in. (51 mm) and lap periphery of opening a min of 1 in. (25 mm). Angles attached to all four sides of steel duct, through glass fiber blanket insulation, on top surface of floor or on both surfaces of wall with No. 10 (or larger) steel sheet metal screws spaced 1 in. (25 mm) from each end and max 4 in. (102 mm) OC.

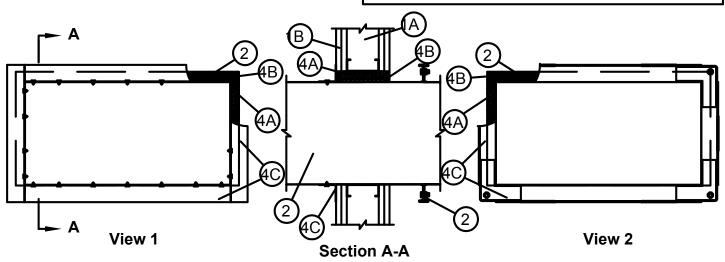
*Bearing the UL Classification Mark

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System No. W-L-7202

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr	F Ratings - 1 and 2 Hr
T Rating - 0 Hr	FT Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Ratings - 1 and 2 Hr
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 0 Hr
· · · · · · · · · · · · · · · · · · ·	
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U400 or V400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:

A. Studs - Wall framing shall consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. Additional studs shall be installed horizontally to form a rectangular box around the through penetrant. B. Gypsum Board* - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Min separation between penetrants to be 1 in. (25 mm). Max area of opening 17.8 sq ft (1.65 m2) with one dimension of opening being 64 in. (1.6 m) or less.

The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed. Steel Duct - One max 60 by 36 in. (1524 by 914 mm) steel duct passing through opening. Steel gauge of duct shall conform with SMACNA requirements. The annular space between steel duct and edges of opening shall be min 0 in. (point contact) to max 2-1/2 in. (64 mm). Two sections of duct may be connected together on one side of the wall. Duct connection to be located max 4 in. (102 mm) from one surface of the wall. Nom 2 in. (51 mm) flanges formed on the end of both duct sections. Min 6 in. (152 mm) long by 2 in. (51 mm) wide by 16 gauge (min 0.056 in. or 1.42 mm thick) "L" shaped steel corner pieces installed at each corner of the flanges on both sides of the connection. Corner pieces attached together with 3/8 in. (10 mm) steel nuts and bolts at each corner. Min 22 gauge (min 0.029 in. or 0.74 mm thick) by 6 in. (152 mm) long steel clips attached to duct flanges at connection max 15 in. (381

mm) OC. Steel duct to be rigidly supported on both sides of wall assembly. Batts and Blankets* - (Optional, Not shown) - Nom 2 in. (51 mm) thick light density (min 3/4 pcf or 12 kg/m3) glass fiber blanket insulation jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with foil-scrim-kraft tape. Nom annular space between insulated steel duct and periphery of opening to be point contact to max 1/2 in. (13 mm) prior to installation of packing material (Item 4A).

See Batts and Blankets (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread value of 25 or less and a Smoke Developed value of 50 or less may be used.

. Firestop System - The firestop system shall consist of the following: A. Packing Material - Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into annular

space such that glass fiber blanket insulation on steel duct is compressed to a maximum overall thickness of 1/2 in. (13 mm). Packing material to be recessed from both surfaces of wall to accommodate the required thickness of fill material. B. Fill, Void or Cavity Material* - Sealant - Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.

SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant

. Retaining Angles - Min 16 gauge (min 0.056 in. or 1.42 mm thick) galv steel angles sized to lap duct a min of 2 in. (51 mm) and to lap periphery of opening a min of 1 in. (25 mm). Angles attached to all four sides of steel duct on both sides of wall with No. 10 (or larger) steel sheet metal screws spaced 1 in. (25 mm) from each end and max 4 in. (102 mm) OC. When steel duct connection (Item 2) is located within 4 in. (102 mm) of wall surface, steel retaining angle only required on side of wall opposite steel duct connection. When optional insulation is present, angles attached to all four sides through glass fiber blanket insulation

Dwg.

*Bearing the UL Classification Mark

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FULLY SPRINKLERED

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Fill, Void or Cavity Material* - Sealant or Putty - (Not Shown) - As an alternate to gypsum joint compound, the gap

wall assembly when four- and seven-gang steel wall plates are installed directly against the wood or steel studs.

SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant, SpecSeal Putty

between the firestop device module and the cutout in the gypsum board may be sealed with fill material on each side of the

When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly fire rating of the wall

Rating is 1 hr. When Item 3A, 3B, 3C, 3D or 3E is used, the maximum F Rating is 2 hr. When max 200 pair No. 24

The L Rating for each empty firestop device module is less than 1 cfm at ambient and at 400F. When Item 3A is

used, the L Rating for each firestop device module with 100 percent visual fill is 4 cfm at ambient and 3 cfm at

400F. When Item 3F is used, the L Rating for each firestop device module with 100 percent visual fill is 1.3 cfm at

ambient and 1 cfm at 400F. When Item 3G or 3H is used, the L Rating for each firestop device module with 100

assembly is greater than 1 hr, the T Rating is 3/4 hr when Item 3A, 3B, 3C, 3D or 3E is used. Otherwise the T

AWG telecommunication cable is used or when Item 3F, 3G, 3H or 3I is used, the maximum F Rating is 4 hr.



mav be used:

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ARCHITECT:

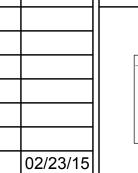


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Drawing Title







BID ISSUE

Revisions

VA FORM 08-6231, OCT 1978

FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696 FAX: (440) 546-9699





*Bearing the UL Classification Mark

L architecture 13212 Shaker Square Suite 204 Cleveland, Ohio 44120

F. 216.752.3833

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FIRE STOPPING DETAILS |Approved:

Project Title 541-CSI-102 **SCI OUTPATIENT CLINIC ADDITION Building Number** Drawing Number **VAMC - WADE PARK** 1-M5.5 ||Drawn Checked 02/23/15 DAD JTP

Facilities Management

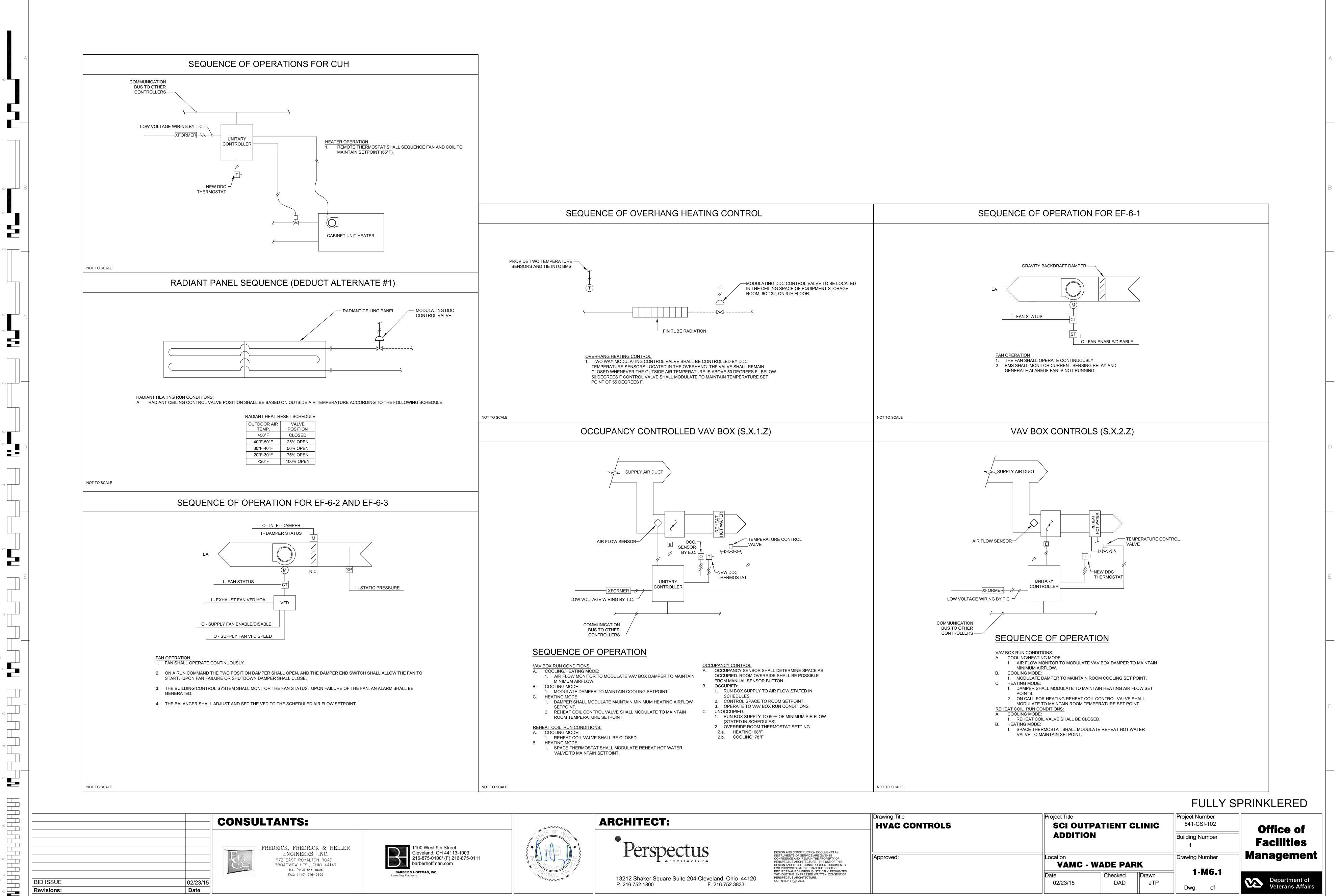
Office of

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CONSULTANTS:

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percent visual fill is 7 cfm at ambient and 2 cfm at 400F.



P. 216.752.1800

F. 216.752.3833

02/23/15

DAD

JTP

Dwg.

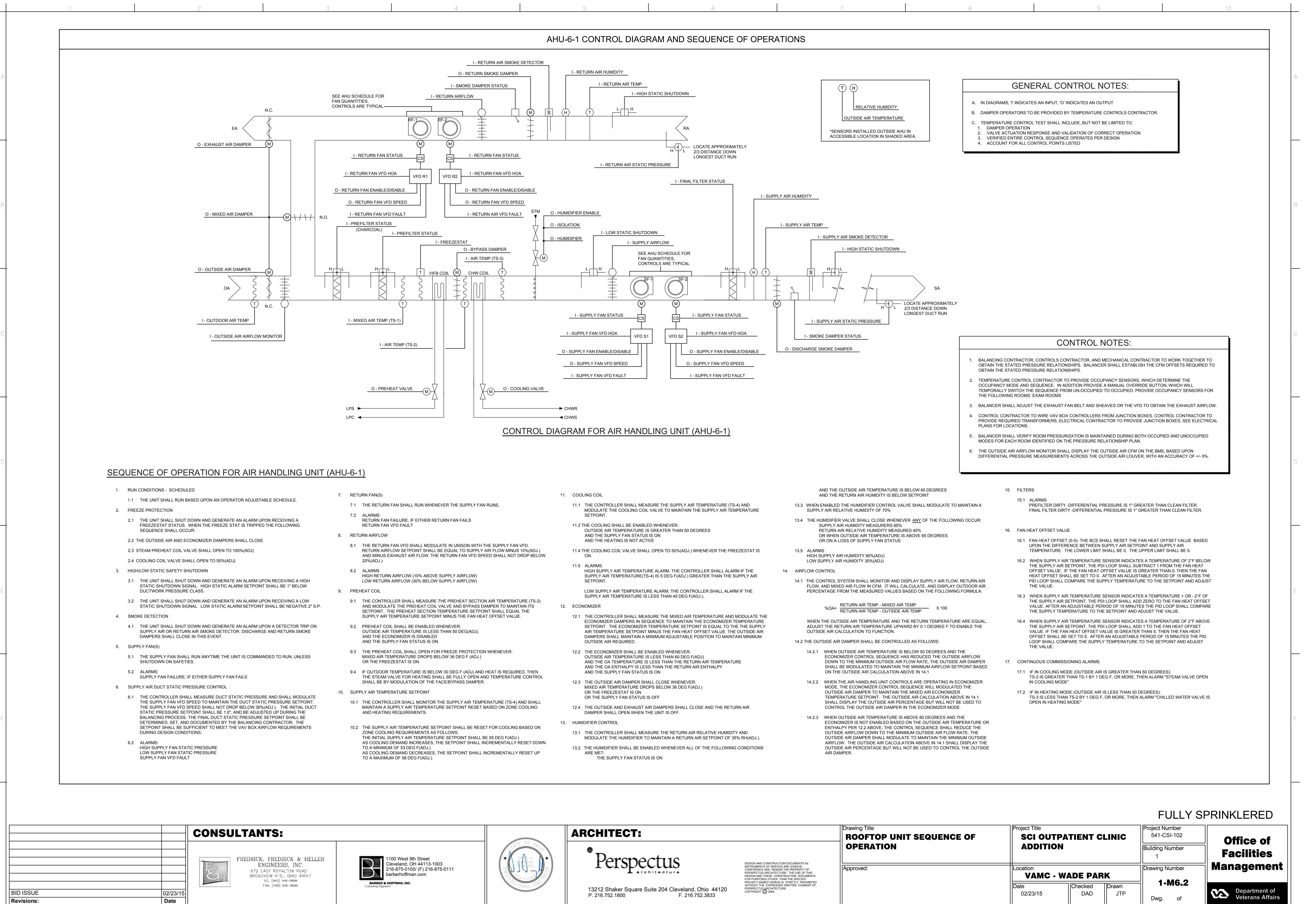
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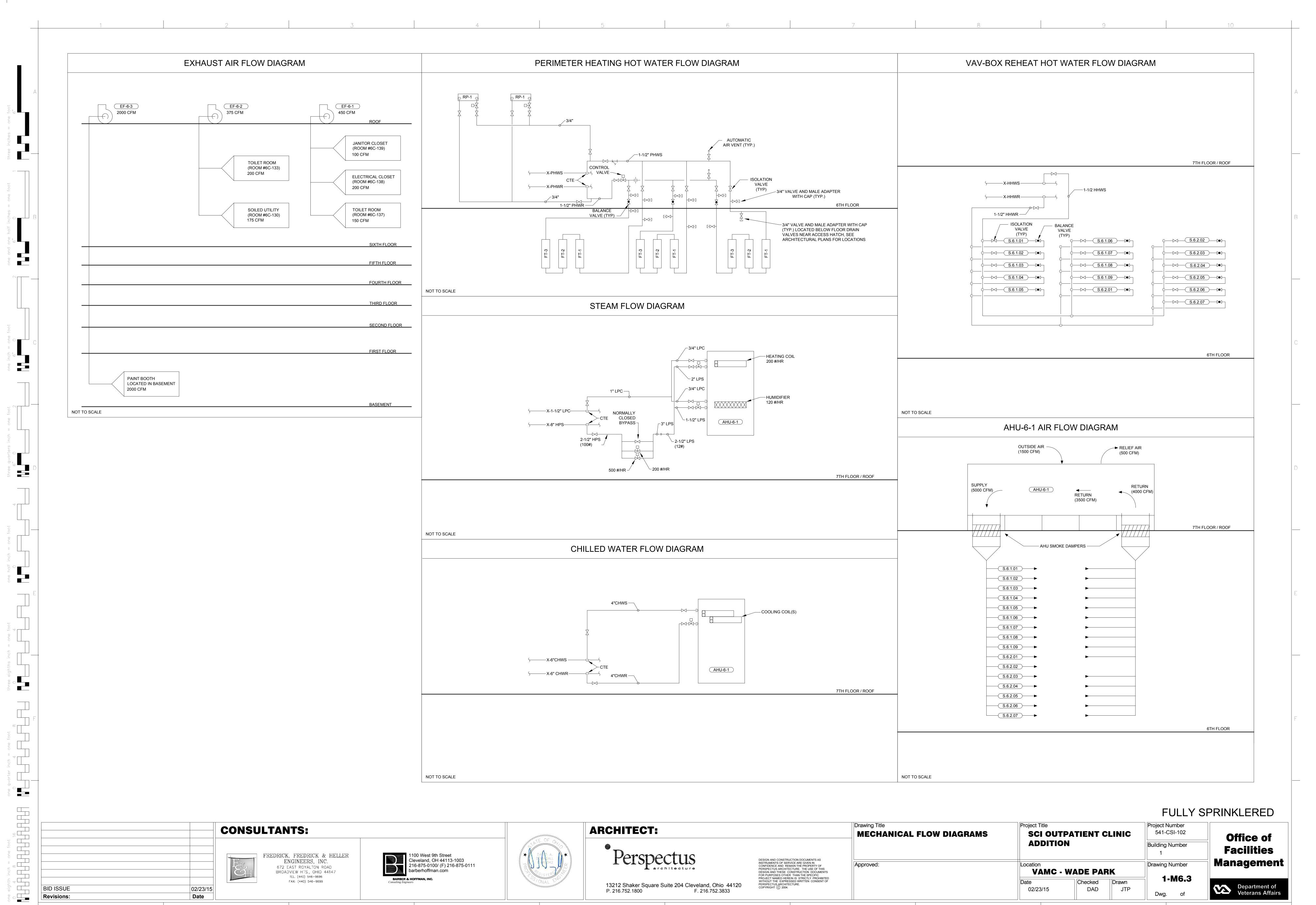
Revisions:

VA FORM 08-6231, OCT 1978

02/23/15

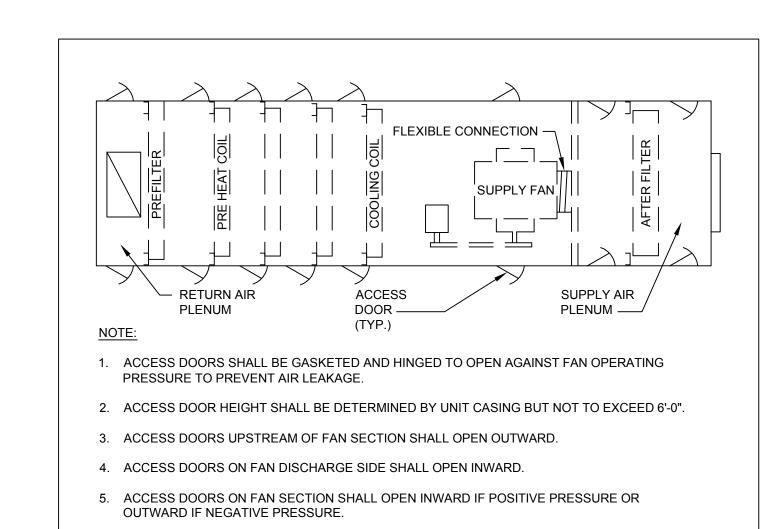
Date





SERVICE AREA	SCI - SIXTH FLOOR ADDITION		
UNIT AIR FLOW			
TOTAL MAXIMUM AIR FLOW (CFM)	5,000		
OUTDOOR AIR SETTING (CFM)	1,500		
FAN SELECTION PERFORMANCE (QUANTITY)	SAF-1 (2)	RAF-1 (2)	
MAXIMUM AIR FLOW (CFM EACH FAN / TOTAL CFM)	2,500 / 5,000	2,500 / 5,000	
EXTERNAL STATIC PRESSURE (IN W.G.)	1.5	1.5	
TOTAL STATIC PRESSURE (IN W.G.)	6.0	2.5	
FAN TYPE	PLENUM	PLENUM	
DRIVE	DIRECT	DIRECT	
MOTOR SIZE HORSEPOWER (QUANTITY)	15 (2)	10 (2)	
VOLTS-PHASE-HERTZ	480-3-60	480-3-60	
FAN SPEED AT 60 HERTZ SPEED (RPM)	1750	1750	
STEAM PREHEAT COIL (VIFB)			
CAPACITY (MBH)	194	-	
ENTERING AIR TEMPERATURE (°F)	46.0	-	
LEAVING AIR TEMPERATURE (°F)	75.0	-	
AIR PRESSURE DROP (IN W.G.)	0.25	-	
CONDENSATE LOAD (LB/HR)	200	-	
STEAM PRESSURE (PSIG)	10	-	
MINIMUM COIL SIZE (SQ. FT.)	7	-	
FACE VELOCITY (FPM)	714	-	
NUMBER OF ROWS/FPI	2/8	-	
STEAM HUMIDIFIER		-	
CAPACITY (LB/HR)	120	-	
STEAM PRESSURE (PSIG)	10	-	
MAXIMUM ABSORPTION DISTANCE (INCHES)	21	-	
CHILLED WATER COIL (PRIMARY)		-	
NUMBER OF COILS IN BANK	1	-	
TOTAL CAPACITY (MBH)	207	-	
SENSIBLE CAPACITY (MBH)	143	-	
ENTERING AIR DB/WB (°F)	79.5/66.5	-	
LEAVING AIR DB/WB (°F)	53.0/52.0	-	
AIR PRESSURE DROP (IN W.G.)	0.5	-	
WATER FLOW (GPM)	42	-	
ENTERING WATER TEMPERATURE (°F)	45	-	
LEAVING WATER TEMPERATURE (°F)	55	-	
WATER PRESSURE DROP (FEET)	10	-	
MAXIMUM FACE VELOCITY (FPM)	400	-	
NUMBER OF ROWS/FPI	8/9	-	
SOUND ATTENUATORS (AT MAX. ULTIMATE AIR FLOW)	SUPPLY INLET		
AIR PRESSURE DROP (IN W.G.)	0.1		
DYNAMIC INSERTION LOSS/SELF GEN. NOISE	-		
63 HERTZ (DB)	2		
125 HERTZ (DB)	11		
250 HERTZ (DB)	18		
500 HERTZ (DB)	36		
1000 HERTZ (DB)	41		
2000 HERTZ (DB)	36		
4000 HERTZ (DB)	25		

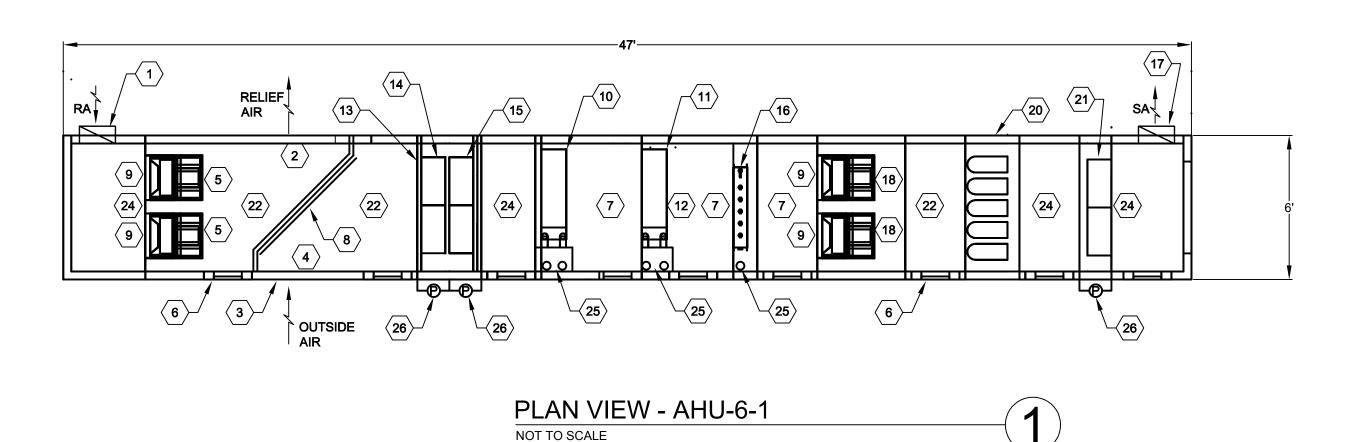
PROVIDE UNIT WITH OUTSIDE AIR, AIR FLOW SENSOR WHICH MEASURES THE VOLUME OF OUTSIDE AIR BASED ON DIFFERENTIAL PRESSURE ACROSS THE OUTSIDE AIR LOUVER WITH AN ACCURACY OF +/- 5% WITH VELOCITIES AS LOW AS 150 FPM.

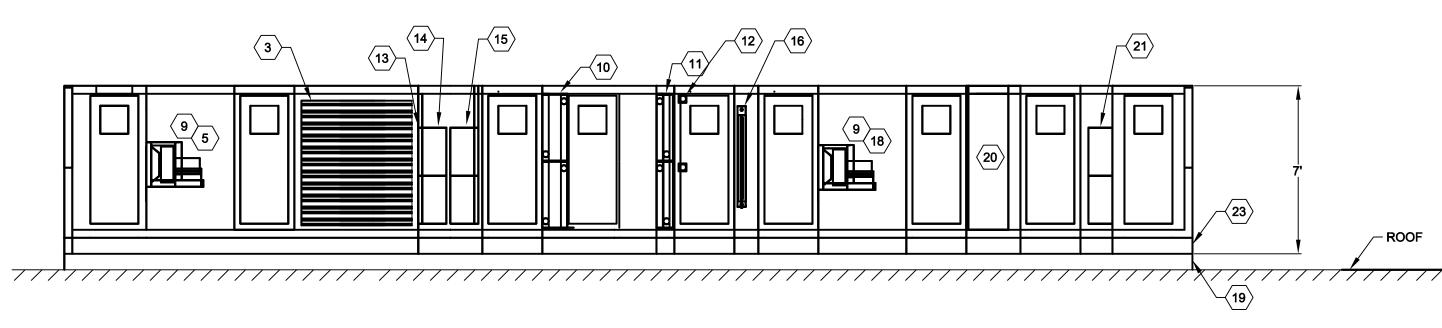


6. EACH DOOR SHALL BE PROVIDED WITH A 10"X10" WINDOW.

HANDLING UNITS

ACCESS DOOR SWING DETAIL FOR AIR





ELEVATION - AHU-6-1 NOT TO SCALE

GENERAL NOTES:

- A. REFER TO MECHANICAL SPECIFICATIONS AND SCHEDULES FOR ADDITIONAL INFORMATION.
- B. PROVIDE AN ACCESS DOOR FOR EACH SECTION, REFER TO AIR HANDLING UNIT DOOR SWING
- C. REFER TO DETAILS AND FLOOR PLANS FOR DUCTWORK AND PIPING.
- D. PROVIDE MAGNEHELIC GAUGE PIPED UPSTREAM AND DOWNSTREAM OF EACH FILTER BANK.
- E. PROVIDE MINIMUM (1) LIGHT FIXTURE PER EACH COMPARTMENT. PROVIDE SWITCH OUTSIDE
- F. PROVIDE (1) VFD FOR EACH FAN. EACH VFD SHALL BE PROVIDED WITH INTEGRAL DISCONNECT. PROVIDE WIRING FROM VFD TO EACH FAN. POWER TO VFD BY INSTALLING CONTRACTOR.

CODED NOTES:

- \langle 1 \rangle RETURN AIR INLET IN SIDE OF UNIT, SIZED FOR MAXIMUM VELOCITY OF 1500 FPM. .PROVIDE DUCT TRANSITION TO OPENING. PROVIDE CONNECTIONS PER SPECIFICATIONS.
- RELIEF AIR ECONOMIZER SECTION. RELIEF AIR LOUVER AND DAMPER IN SIDE OF UNIT. RELIEF AIR OPENING TO BE SIZED FOR A MAXIMUM VELOCITY OF 500 FPM (10 SQUARE FT LOUVER). PROVIDE
- MOTOR OPERATED DAMPER, ACTUATOR SHALL BE INSTALLED SO AS TO BE EASILY ACCESSIBLE. OUTSIDE AIR ECONOMIZER SECTION. OUTSIDE AIR LOUVER AND DAMPER IN SIDE OF UNIT. OUTSIDE AIR OPENING TO BE SIZED FOR A MAXIMUM VELOCITY OF 400 FPM (12.5 SQUARE FT LOUVER). PROVIDE
- 4 OUTSIDE AIR MOTOR OPERATED DAMPER AND AIRFLOW MONITOR SHALL MEASURE AIRFLOW CFM AND

AN AIRFLOW MONITOR SEE SCHEDULE NOTE. ACTUATOR SHALL BE INSTALLED SO AS TO BE EASILY

- $\langle 5 \rangle$ TWO PLENUM RETURN AIR FANS. MOUNT ON SPRING ISOLATION BASE.
- \langle 6 \rangle ACCESS DOORS SIZED TO ACCOMMODATE FAN REPLACEMENT. MINIMUM SIZE TO BE 3'x5'. COORDINATE REQUIRED SIZE WITH FINAL EQUIPMENT SELECTION.
- ⟨ 7 ⟩ PROVIDE 36" ACCESS SECTION WITH ACCESS DOOR

DISPLAY VALUE ON BMS.

- \langle 8 \rangle MIXED AIR DAMPER. ACTUATOR SHALL BE INSTALLED SO AS TO BE EASILY ACCESSIBLE.
- (9) PROVIDE BLANK-OFF PANELS WITH FASTENING SYSTEM AT INLET OF EACH FAN. THESE WILL BE USED TO ISOLATE A FAN IN THE EVENT OF A FAN FAILURE IN THE FUTURE.
- VERTICAL FACE AND BYPASS STEAM PRE-HEAT COIL. EXTEND COIL PIPING TO PIPE CHASE AND TERMINATE WITH A FLANGE.
- (11) CHILLED WATER COOLING COIL WITH STAINLESS STEEL DRAIN PAN. EXTEND COIL PIPING TO PIPE CHASE AND DOWN THRU BOTTOM OF UNIT AND TERMINATE WITH A FLANGE. DRAIN PAN TO BE PIPED OUTSIDE OF UNIT AND TRAPPED.
- $\langle 12
 angle$ PROVIDE UV LIGHT EMITTERS DOWNSTREAM OF COOLING COILS. WIRE TO SWITCH OUTSIDE OF AHU,
- PROVIDE DOOR SAFETY SWITCH TO CUT POWER TO EMITTERS WHEN DOOR IS OPENED. PROVIDE 2" DEEP PRE-FILTER 30% PLEATED (MERV 6) PRE-FILTER. QUANTITY OF FOUR(4) 24"X24" FILTERS.
- \(\frac{14}\rightarrow\) PROVIDE12" DEEP FILTER 85% PLEATED (MERV 13). QUANTITY OF FOUR (4) 24"X24" FILTERS WITH FILTER
- PROVIDE 12" DEEP CARBON ABSORBER CARTRIDGE MEDIA AND 2" DUST OFF FILTER .QUANTITY OF FOUR (4) 24"X24" FILTERS EACH WITH FILTER RACK.
- \$\langle 16 \rangle\$ STEAM HUMIDIFIER DISPERSION TUBE GRID. EXTEND COIL PIPING TO PIPE CHASE AND TERMINATE WITH
- A FLANGE. PROVIDE FLOOR DRAIN IN HUMIDIFIER SECTION.
- SUPPLY AIR DISCHARGE OPENING IN SIDE OF UNIT, TO BE SIZED FOR A MAXIMUM VELOCITY OF 1500 FPM. PROVIDE DUCT TRANSITION TO OPENING.
- TWO PLENUM SUPPLY AIR FANS. EACH MOUNTED ON SPRING ISOLATION BASES.
- \langle 19 \rangle 14" HIGH INSULATED ROOF CURB. PROVIDE STRUCTURAL CONTINUOUS ROOF CURB DESIGNED TO SUPPORT THE UNIT AND FLASH ROOFING.
- $\overline{\langle 20 \rangle}$ SOUND ATTENUATION SECTION.
- $\langle 21 \rangle$ FINAL FILTER SECTION. PROVIDE HEPA FILTERS (99.97%) WITH FILTER FRAME AND SPRINGS. QUANTITY OF FOUR (4) 24x24 FILTERS.
- 22 PROVIDE 48" ACCESS SECTION WITH ACCESS DOOR
- $\langle 23 \rangle$ 8" STRUCTURAL STEEL BASE.
- 24 PROVIDE 24" ACCESS SECTION WITH ACCESS DOOR
- (25) PROVIDE BLANK OFF AND 12"x12" PIPE CHASE DOWN THRU FLOOR OF UNIT
- (26) PROVIDE MAGNEHELIC GAUGE PIPED UPSTREAM AND DOWNSTREAM OF FILTER BANK.

FULLY SPRINKLERED

Dwg.

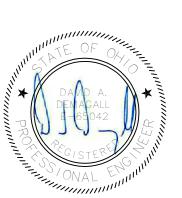
CONSULTANTS: BID ISSUE 02/23/15 Date Revisions:

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VA FORM 08-6231, OCT 1978

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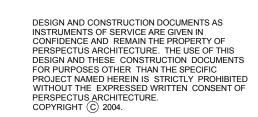
👢 architecture

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|Approved:

Project Title Project Number Drawing Title 541-CSI-102 AIR HANDLING UNIT SCI OUTPATIENT CLINIC SCHEDULE AND DETAIL **ADDITION** Building Number Drawing Number **VAMC - WADE PARK** 1-M7.2 Checked Drawn 02/23/15 DAD JTP

Office of **Facilities** Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

HYDRONIC RADIANT HEAT PANELS

MARK (NOTE 1)	RP-1
PERFORMANCE (NOTE 2)	
CAPACITY (BTH/LF)	140
AVERAGE WATER TEMPERATURE (°F)	190
WATER FLOW (GPM/LF) (NOTE 3)	.014
MAXIMUM WATER PRESSURE DROP (FT/100FT)	1.5
DESCRIPTION	
PANEL WIDTH (IN) (NOTE 5)	6
NO. PASSES (NOTE 4)	1
BASIS OF SPECIFICATION	
MANUFACTURER	-
MODEL	-
TYPE	EXTRUDED ALUM.

- 1. SEE PLANS FOR FEET OF ACTIVE PANEL REQUIRED. PANELS TO RUN WALL-TO-WALL
- UNLESS OTHERWISE INDICATED. 2. HEATING CAPACITIES BASED ON 70 DEG. F. AVERAGE ROOM TEMPERATURE, 70 DEG. F. AVERAGE UNHEATED SPACE TEMPERATURE WITH NO AIR MOVEMENT, 90% OF
- CAPACITY DOWNWARD, 10% UPWARD.
- 3. PANEL GPM IS GPM/LINEAL FOOT TIMES ACTIVE LINEAL FEET ON CIRCUIT. 4. CIRCUIT GPM IS NUMBER OF CIRCUITS/PANEL DIVIDED BY PANEL GPM. 5. PANEL STRAIGHT LENGTHS UNDER 16FT. SHALL HAVE CONTINUOUS (UNCUT) PANEL EXTRUSION RUNNING WALL TO WALL, OR AS INDICATED. PANEL STRAIGHT LENGTHS
- EXCEEDING 16FT SHALL HAVE EXTRUSION CUT CENTERED ON WALL AT CLOSEST GRIDLINE, OR SYMMETRICALLY IF ROOM IS GREATER THAN 32 FT. IN LENGTH. 6. PROVIDE 1" THICK FIBERGLASS BAT INSULATION ON TOP OF PANELS.

FI	\supset					
HOT WATER FINNED TUBE RADIATION						
MARK	FT-1	FT-2	FT-3			
SPACE SERVED	OVERHANG	OVERHANG	OVERHANG			
PERFORMANCE						
CAPACITY (BTU/LF)	1050	750	550			
ENTERING AIR TEMP. (°F)	50	50	50			
ENTERING WATER TEMP. (°F)	180	160	140			
AVERAGE WATER TEMP. (°F)	170	150	130			
WATER FLOW (GPM)	4	4	4			
SIZE						
TUBE SIZE (DIAMETER)	3/4"	3/4"	3/4"			
ELEMENT LENGTH	4'	4'	4'			
FINS PER FOOT	40	40	40			

4-1/4"x4-1/4"

FIN SIZE

- 1. FIN TUBE ELEMENT SHALL BE COPPER TUBE WITH 0.02" ALUMINUM FINS. 2. MOUNT FINTUBE 6" BELOW STRUCTURAL STEEL.
- 3. PIPING BETWEEN TWO PIECES OF ELEMENT SHALL BE UNINSULATED.

EXHAUST FANS	(FF X
MARK	
SPACE SERVED	

MARK	EF-6-1	EF-6-2	EF-6-3
SPACE SERVED	SCI ADDITION GENERAL EXHAUST	SCI ADDITION	PAINT BOOTH EXHAUST
STYLE	DOWNBLAST CENTRIFUGAL	UTILITY SET CENTRIFUGAL	UTILITY SET CENTRIFUGAL
WHEEL	BACKWARD INCLINE	BACKWARD INCLINE	BACKWARD INCLINE
PERFORMANCE			
AIR FLOW (CFM)	450	400	2000
STATIC PRESSURE (IN W.G.)	0.5	0.5	1.5
FAN SPEED (RPM)	1400	2003	1697
NOISE LEVEL (SONES)	7.5	10.0	9.1
MOTOR			
TYPE OF DRIVE	BELT	BELT	BELT
MOTOR SIZE (HP)	.167	0.5	1.0
VOLTS-PHASE-HERTZ	120-1-60	480-3-60	480-3-60
ACCESSORIES			
BIRDSCREEN	YES	YES	YES
UNIT MOUNTED DISCONNECT	YES	NO	NO
ROOF CURB	YES	YES	YES
MOTORIZED BACKDRAFT DAMPER	NO	YES	YES
GRAVITY BACKDRAFT DAMPER	YES	NO	NO
ALUMINUM WHEEL	YES	NO	YES
INTEGRAL DRAIN	NO	YES	YES
ALUMINUM FAN CONSTRUCTION	YES	NO	NO
MOTORS SHALL HAVE GROUNDED RINGS	NO	YES	YES
SPARK PROOF MOTOR	NO	NO	YES
SPRING ISOLATION	NO	NO	YES

LOUVERS (WL-X)

WL-1
HOIST VENTILATION
RELIEF
6"
-
50
ALUMINUM
3'-0" x 2'-4"
1,2,3,4,5,6,

- 1. BAKED ENAMEL FINISH.
- 2. PROVIDE MOTOR OPERATED DAMPER ON BACKSIDE OF LOUVER.
- 3. BIRDSCREEN ON INTERIOR. 4. DRAINABLE BLADE.
- 5. CUSTOM COLOR TO MATCH METAL WALL PANELS, SUBMIT COLOR
- SAMPLE TO THE ARCHITECT. 6. PROVIDE MOTOR OPERATED DAMPER, AIR FOIL BLADE, JAMB SEALS, OPPOSED BLADE. DAMPER OPERATOR TO BE NORMALLY(FAIL) OPEN. COORDINATE VOLTAGE, ACTUATOR VOLTAGE AS REQUIRED BY FIRE ALARM CONTRACTOR.

VAV TERMINAL CONNECTION SCHEDULE

	INL	_ET				DIS		
TERMINAL TYPE	TERMINAL NECK SIZE (IN)	SUPPLY DUCT (IN)	MAX AIRFLOW (CFM)	TERMINAL AIR PRESSURE DROP (IN W.G.)	MAXIMUM RADIATED NOISE (NC)	TERMINAL CONN. SIZE (IN)	DISCHARGE DUCT (IN)	SOUND ATTENUATOR
Α	6"Ø	8"Ø	350	1.0"	25	12x8	10x10	-
В	8"Ø	10"Ø	700	1.0"	27	12x10	12x12	-
С	10"Ø	12"Ø	1200	1.0"	28	14x12.5	20x10	-
D	12"Ø	14"Ø OR 16x10	1600	1.0"	30	16x15	22x12	-
E	14"Ø	18x12	2400	1.0"	30	20x18	30x12	-
F	16"Ø	24x12	3200	1.0"	25	24x18	30x14	-
NOTES	-	-		-		•		•

- 1. UNLESS OTHERWISE NOTED ON PLANS, PROVIDE DUCT SIZES AS INDICATED. CONTRACTOR IS PERMITTED TO UTILIZE AN EQUIVALENT
- 2. CONTRACTOR SHALL PROVIDE ALL TRANSITIONS FROM TERMINAL CONNECTIONS/SOUND ATTENUATORS TO DUCT SIZES AS INDICATED.

AIR DISTRIBUTION DEVICE (DIFFUSERS, REGISTERS AND GRILLES)

(NECK)				•				,
MARK	TYPE	FACE SIZE (INCHES)	NECK SIZE (INCHES)	STYLE	COLOR	MATERIAL	DAMPER	NOTES
S1	DIFFUSER	24x24	SEE PLANS	PLAQUE FACE LAY-IN	WHITE	STAMPED STEEL	NO	1,3
R1	RETURN CEILING	24x12	NOTE 2	PERFORATED FACE LAY-IN	WHITE	STAMPED STEEL	NO	2,3
R2	RETURN CEILING	24x24	NOTE 2	PERFORATED FACE LAY-IN	WHITE	STAMPED STEEL	NO	2,3
E1	EXHAUST GENERAL	24x12	NOTE 2	PERFORATED FACE	WHITE	ALUMINUM	NO	2,3

- MAXIMUM SOUND LEVEL SHALL BE NC=22, SUBMITTAL SHALL INDICATE SPACE SERVED. ALL CEILING MOUNTED DEVICES SHALL BE COORDINATED AND COMPATIBLE WITH THE ARCHITECTURAL CEILING SYSTEM.
- PROVIDE FULL FACE DIFFUSER, SEE PLANS FOR NECK SIZE. WHERE INDICATED ON PLANS PROVIDE BLANK-OFF QUADRANT IN THE NECK OF THE
- NOTE 2: TAG NECK SIZE INDICATES NOMINAL DUCT CONNECTION OF GRILLE. PROVIDE FULL SIZE PLENUM OFF TOP OF GRILLE AND TRANSITION TO DUCT SIZE SHOWN ON PLANS. PAINT INSIDE OF PLENUM BOX FLAT BLACK.
- NOTE 3: REFER TO SPECIFICATIONS FOR SPECIFIC MATERIAL, TYPE AND QUALITY REQUIREMENTS..

MARK	WL-1
SERVICE	HOIST VENTILATION
TYPE	RELIEF
DEPTH	6"
PERFORMANCE	
AIR FLOW (CFM)	-
MINIMUM FREE AREA (%)	50
DESCRIPTION	
MATERIAL	ALUMINUM
SIZE	3'-0" x 2'-4"

MARK	VSD-1	VSD-2	VSD-3	VSD-4	VSD-5	VSD-6
PERFORMANCE						
EQUIPMENT TAG	AHU-6-1	AHU-6-1	AHU-6-1	AHU-6-1	EF-6-2	EF-6-3
MOTOR SERVICE	SUPPLY FAN	SUPPLY FAN	RETURN FAN	RETURN FAN	EXHAUST FAN	EXHAUST FAN
QUANTITY OF MOTORS SERVED	1	1	1	1	1	1
MOTOR HP (EACH)	15	15	10	10	0.5	1
VOLTAGE-PHASE-FREQUENCY	480-3-60	480-3-60	480-3-60	480-3-60	480-3-60	480-3-60
DESCRIPTION						
CIRCUIT BREAKER INPUT DISCONNECT	YES	YES	YES	YES	YES	YES
MANUAL BYPASS	YES	YES	YES	YES	YES	YES
TEMPERATURE CONTROLS COMMUNICATION CARD	YES	YES	YES	YES	YES	YES
UL NEMA TYPE 1 ENCLOSURE	YES	YES	YES	YES	YES	YES
DIGITAL DISPLAY WITH KEYPAD INTERFACE	YES	YES	YES	YES	YES	YES
HAND-OFF-AUTO SELECTOR	YES	YES	YES	YES	YES	YES
3-YEAR WARRANTY	YES	YES	YES	YES	YES	YES
FACTORY START-UP	YES	YES	YES	YES	YES	YES
EMERGENCY SHUTDOWN CONTACT	YES	YES	YES	YES	YES	YES
BASIS OF SPECIFICATION						
MANUFACTURER	-	-	-	-	-	-
TYPE	PWM	PWM	PWM	PWM	PWM	PWM

HOT WATER CABINET UNIT HEATER

ENTERING WATER TEMPERATURE (°F)

LEAVING WATER TEMPERATURE (°F)

WATER PRESSURE DROP (FT)

MINIMUM CAPACITY (BTU/HR)

AIR FLOW (CFM AT 70°F)

ENTERING AIR (°F)

LEAVING AIR (°F)

WATER FLOW (GPM)

DIMENSIONAL INFORMATION

VOLTS/PHASE/HERTZ

1. PROVIDE WITH CLEANABLE FILTER.

2. UNIT SHALL BE SLOPE TOP SURFACE WALL MOUNTED.

3. UNIT SHALL HAVE BOTTOM RETURN AND TOP SUPPLY GRILLES.

4. TEMPERATURE CONTROL CONTRACTOR TO PROVIDE REMOTE THERMOSTAT.

FAN MOTOR (HP)

COIL AREA (FT2)

WEIGHT (LBS)

ELECTRICAL

AMPS

FAN RPM

NOTES:

CUH-1 STAIRWELL

12,200

335

60

180

160

113.5 2.0

0.26

1.5 12

164

120/1/60

8.0

1/15 1050

Management

MARK

LOCATION

PERFORMANCE

"S" - SUPPLY TERMINAL UNIT

"Z" - SEQUENTIAL NUMBER

(S.X.Y.Z) "X" - BUILDING FLOOR NUMBER "Y" - CONTROL TYPE

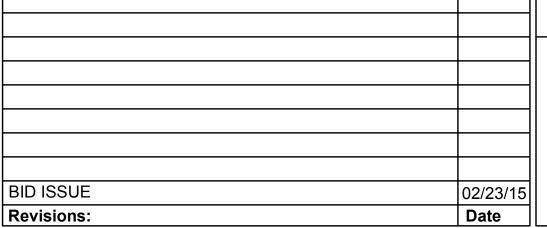
- 1. PROVIDE DRIVE WITH COMMUNICATION CARD COMPATIBLE WITH THE TEMPERATURE CONTROLS COMMUNICATION PROTOCOL WHICH SHALL ENABLE READING ALL POINTS, CHANGING PARAMETERS AND SETPOINTS, AND CONTROLLING SPEEDS.
- 2. DRIVE TYPE SHALL BE PULSE WIDTH MODULATING.

HEATING COIL PERFORMANCE											
MARK	TERMINAL SIZE (NOTE 1)	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	CAPACITY (MBH)	COIL FLOW (GPM)	MINIMUM LEAVING AIR TEMP. (°F) NOTE 7	TERMINAL AIR PRESSURE DROP (IN-W.G.)	WATER PRESS. DROP (FT)	NUMBER OF ROWS	PIPE SIZE (IN) (NOTE 5)
S.6.1.01	А	150	115	115	6.0	1.0	99.4 °F	0.05	0.50	1	3/4"
S.6.1.02	А	250	185	185	7.5	1.0	92.6 °F	0.1	0.50	1	3/4"
S.6.1.03	A	250	185	185	7.5	1.0	92.6 °F	0.1	0.50	1	3/4"
S.6.1.04	В	575	575	575	23.0	1.0	92.1 °F	0.3	0.33	2	3/4"
S.6.1.05	А	200	185	185	7.5	1.0	92.6 °F	0.06	0.50	1	3/4"
S.6.1.06	В	425	300	300	11.7	2.0	91.2 °F	0.1	2.3	1	3/4"
S.6.1.07	А	200	185	185	7.5	1.0	92.6 °F	0.06	0.50	1	3/4"
S.6.1.08	А	200	185	185	7.5	1.0	92.6 °F	0.06	0.50	1	3/4"
S.6.1.09	A	115	115	115	6.0	1.0	94.4 °F	0.01	0.50	1	3/4"
S.6.2.01	В	400	330	330	12.3	2.0	90.0 °F	0.05	2.3	1	3/4"
S.6.2.02	A	140	140	140	6.8	1.0	94.4 °F	0.05	0.50	1	3/4"
S.6.2.03	В	620	620	620	23.6	1.0	90.4 °F	0.3	0.33	2	3/4"
S.6.2.04	A	180	180	180	7.4	1.0	93.1 °F	0.05	0.50	1	3/4"
S.6.2.05	В	600	570	570	23.4	1.0	93.1 °F	0.3	0.33	2	3/4"
S.6.2.06	А	200	200	200	7.7	1.0	90.7°F	0.06	0.5	1	-
S.6.2.07	А	250	100	100	5.9	1.0	99.4 °F	0.1	0.5	1	-

VAV TERMINAL SCHEDULE

- NOTE 1: TERMINALS SHALL BE CAPABLE OF OPERATING WITH A MINIMUM INLET PRESSURE OF 0.5" W.G. FURNISH WITH AIR FLOW SWITCH, AND ACTUATOR. PROVIDE WITH SCREW ACCESS (UN-HINGED) WHERE TERMINALS ARE INSTALLED IN THE BEAM/JOIST SPACE. BOXES SHALL BE INSULATED PER
- NOTE 2: REFER TO "VARIABLE AIR VOLUME TERMINALS: CONNECTION SCHEDULE" FOR TERMINAL SIZE, DUCT CONNECTIONS AND DUCT SIZES.
- NOTE 3: MAXIMUM AIR BOX PRESSURE DROP SHALL BE 0.3" W.G.
- NOTE 4: MAXIMUM COIL WATER PRESSURE DROP SHALL BE 5 FEET.
- NOTE 5: MINIMUM PIPE SIZE SHALL BE 3/4". SEE RE-HEAT COIL PIPING DETAIL FOR COIL PIPING.
- NOTE 6: TEMPERATURE CONTROL CONTRACTOR TO PROVIDE DEVICES AS INDICATED FOR TERMINAL.
- NOTE 7: IN HEATING MODE LEAVING AIR TEMP LIMITS MINIMUM 90°F MAXIMUM 100°F

CONSULTANTS:

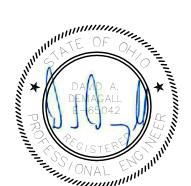


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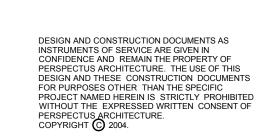
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Perspectus

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				FULLY S	SPRINKLERED
MECHANICAL SCHEDULES	SCI OUTPATIENT CLINIC ADDITION			Project Number 541-CSI-102 Building Number 1	Office of Facilities
Approved:	Location VAMC -	WADE PA	RK	Drawing Number	Management
	Date 02/23/15	Checked DAD	Drawn JTP	1-M7.1 Dwg. of	Department of Veterans Affairs

LIGHTING FIXTURES BRANCH CIRCUIT WIRING LIGHTING CONTROLS 20A-1P-120/277V WALL SWITCH MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED NO. OF CCTS —— LIGHTING FIXTURE CONNECTED TO NORMAL CIRCUIT AS INDICATED - TYPE AS SPECIFIED IN SCHEDULE. "A" INDICATES TYPE, "3" BRANCH CIRCUIT HOME RUN TO PANEL - ARROWHEADS INDICATE CIRCUITS. WIRE INDICATED ARE GREEN GROUND, IN CONDUIT INDICATES CIRCUIT NUMBER ASSIGNMENT, "a" INDICATES LOCAL SWITCHING CONTROL. CONNECT FIXTURES SO THAT ALL LAMPS SEPARATE NEUTRALS (SHARED NEUTRALS ARE NOT PERMITTED FOR BRANCH CIRCUITS) AND THREE HOT LEGS (A ARE CONTROLLED BY \$a 20A-3WAY-120/277V WALL SWITCH MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED WIRE SIZE DIFFERENT PHASE FOR EACH CIRCUIT) MAXIMUM THREE CIRCUITS PER CONDUIT. 3/4" MINIMUM CONDUIT WITH WIRE (MIN. #12AWG) SIZE INDICATED ON DRAWING ("XX" INDICATES AWG SIZE). ALL POWER WIRING SHALL BE STRANDED COPPER LIGHTING FIXTURE CONNECTED TO NORMAL CIRCUIT - TYPE AS SPECIFIED IN SCHEDULE, "A", INDICATES TYPE, "3" INDICATES CIRCUIT 277V SINGLE POLE 0-10VDC LOW-VOLTAGE LARGE PADDLE SWITCH WITH SMALL DIMMER SLIDER, AUTOMATICALLY RETURNS TO PRESET NUMBER ASSIGNMENT. CONNECT FIXTURES SO THAT MIDDLE LAMP(S) IS CONTROLLED BY \$ AND OUTER LAMPS ARE CONTROLLED CONDUCTORS WITH THHN/THWN INSULATION. PROVIDE SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SAME LEVEL - ENGRAVING LABEL - MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED. VERIFY ALL SWITCHES ARE COMPATIBLE WITH FIXTURE SIZE AS PHASE AND NEUTRAL, UNLESS OTHERWISE NOTED) FOR EACH CONDUIT. CONDUIT WIRE FILLS SHALL BE IN BY \$b AS INDICATED BY "a,b" ACCORDANCE WITH LATEST NATIONAL ELECTRIC CODE. CONDUCTORS-277V SINGLE POLE, 3-WAY, 0-10VDC LOW-VOLTAGE LARGE PADDLE SWITCH WITH SMALL DIMMER SLIDER, AUTOMATICALLY RETURNS TO LIGHTING FIXTURE CONNECTED TO EMERGENCY LIFE SAFETY AHEAD OF LOCAL SWITCHING - TYPE AS SPECIFIED IN SCHEDULE, "A" PRESET LEVEL - ENGRAVING LABEL - MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED. VERIFY ALL SWITCHES ARE COMPATIBLE WITH INDICATES TYPE, "3" INDICATES EMERGENCY LIFE SAFETY CIRCUIT NUMBER ASSIGNMENT. NEUTRALS— LIGHTING FIXTURE CONNECTED TO EMERGENCY LIFE SAFETY - TYPE AS SPECIFIED IN SCHEDULE, "A" INDICATES TYPE, "3" INDICATES GROUND-O CONDUIT UP EMERGENCY LIFE SAFETY CIRCUIT NUMBER ASSIGNMENT. PROVIDE GENERATOR TRANSFER DEVICE TO CONTROL ALL EMERGENCY 120/277V, 1200W SINGLE POLE WALL SWITCH WITH INTEGRAL ON/OFF OCCUPANCY SENSOR - PASSIVE INFRARED TYPE, MOUNTED AT DEVICES DESIGNATED WITH "G". SEE "GENERATOR TRANSFER DETAIL" ON SHEET 1-E6.2 FOR ADDITIONAL WORK REQUIREMENTS. CONDUIT DOWN LIGHTING FIXTURE CONNECTED TO EMERGENCY CRITICAL CIRCUIT - TYPE AS SPECIFIED IN SCHEDULE, "A" INDICATES TYPE, "3" OCCUPANCY/VACANCY SENSOR - PROVIDE COMPLETE OCCUPANCY SENSOR SYSTEM INCLUDING SENSOR, POWER SUPPLY AND RELAY INDICATES CIRCUIT NUMBER ASSIGNMENT. CONNECT FIXTURES SO THAT ALL LAMPS ARE CONTROLLED BY \$a UNIT. REFER TO "OCCUPANCY SENSOR PROGRAM SCHEDULE" AND "OCCUPANCY SENSOR SYSTEM SPECIFICATIONS" FOR ADDITIONAL INFORMATION. PROVIDE FORM C RELAY IN RELAY UNIT IN ALL OCCUPANCY SENSORS FOR HVAC SWITCHING. POWER DISTRIBUTION EQUIPMENT (FLOOR PLAN VIEW) LIGHTING FIXTURE CONNECTED TO NORMAL CIRCUIT AS INDICATED - TYPE AS SPECIFIED IN SCHEDULE. "A" INDICATES TYPE, "3" INDICATES CIRCUIT NUMBER ASSIGNMENT, "a" INDICATES LOCAL SWITCHING CONTROL. CONNECT FIXTURES SO THAT ALL LAMPS U - ULTRASONIC TYPE SENSOR ARE CONTROLLED BY \$a 208/120V-3Ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL. R - INFRARED TYPE SENSOR D - DUAL TECHNOLOGY TYPE SENSOR LIGHTING FIXTURE CONNECTED TO EMERGENCY LIFE SAFETY <u>AHEAD</u> OF LOCAL SWITCHING - TYPE AS SPECIFIED IN SCHEDULE, "A" INDICATES TYPE, "3" INDICATES EMERGENCY LIFE SAFETY CIRCUIT NUMBER ASSIGNMENT. 480/277V-3Ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL. # - PROVIDE RELAY WITH NORMALLY OPEN (N.O.) CONTACT(S), # DENOTES THE QUANTITY OF N.O. RELAYS. IF BLANK, PROVIDE (1) LED LIGHTING FIXTURE, CONNECTED TO NORMAL CIRCUIT - TYPE AS SPECIFIED IN SCHEDULE. N.O. RELAY. GENERAL PURPOSE, 3 PHASE DRY-TYPE TRANSFORMER - TYPE AS NOTED ON PLANS OTHER DESIGNATIONS L - "LINEAR COVERAGE", TWO SIDED, 90 LINEAR FT. COVERAGE LED LIGHTING FIXTURE, CONNECT TO EMERGENCY CRITICAL CIRCUIT - TYPE AS SPECIFIED IN SCHEDULE. FUSED DISCONNECT SWITCH - SIZE AND TYPE AS NOTED. PROVIDE CLASS RK1 FUSES UNLESS OTHERWISE NOTED. NEMA 1 ENCLOSURE UNLESS OTHERWISE NOTED. LED LIGHTING FIXTURE, CONNECT TO EMERGENCY LIFE SAFETY CIRCUIT AHEAD OF LOCAL SWITCHING - TYPE AS SPECIFIED IN ULTRASONIC SENSOR WITH (2) N.O. CONTACTS AND (1) FORM C RELAY **GROUNDING BUSBAR** DUAL TECHNOLOGY SENSOR WITH (1) N.O. CONTACT AND (1) FORM C RELAY LED LIGHTING FIXTURE, CONNECT TO EMERGENCY LIFE SAFETY CIRCUIT. PROVIDE GENERATOR TRANSFER DEVICE TO CONTROL ALL GENERAL ELECTRICAL EQUIPMENT. REFER TO PLANS FOR ADDITIONAL INFORMATION. EMERGENCY DEVICES DESIGNATED WITH "G". SEE "TYPICAL GENERATOR TRANSFER DETAIL" ON SHEET 1-E6.2 FOR ADDITIONAL DAYLIGHT HARVESTING - PROVIDE AUTOMATIC DIMMING CONTROL PHOTOCELL CAPABLE OF AUTOMATICALLY DIMMING (10-100% LIGHTING LEVEL MINIMUM) LOW-VOLTAGE BALLASTS/DRIVER FOR LIGHTING FIXTURES ON PLANS MARKED "D". PROVIDE PROGRAMMING OF SENSOR SUCH THAT FIXTURES AUTOMATICALLY DIM DOWN TO MAXIMUM THRESHOLD AT WORK EXIT SIGN - CONNECT TO EMERGENCY LIFE SAFETY CIRCUIT AHEAD OF LOCAL SWITCHING. TYPE AS SPECIFIED IN SCHEDULE. MOTOR AND MOTOR CONTROLLERS (FLOOR PLAN VIEW) SURFACE. FIXTURES SHALL TURN OFF WHEN OUTSIDE LIGHT CONTRIBUTION (SUNLIGHT, OTHER FIXTURES, ETC.) EXCEEDS MAXIMUM THRESHOLD AT WORK SURFACE. EMERGENCY BATTERY LIGHTING FIXTURE - CONNECT TO EMERGENCY LIFE SAFETY CIRCUIT AHEAD OF LOCAL SWITCHING. TYPE AS COMBINATION FUSED MAGNETIC MOTOR STARTER COMPLETE WITH "HAND-OFF-AUTO" SELECTOR SWITCH AND RED "RUN" PILOT SPECIFIED IN SCHEDULE. LIGHT IN COVER. NEMA SIZE 0 CONTACTS AND NEMA 1 ENCLOSURE MINIMUM UNLESS OTHERWISE NOTED. STAIRWELLS - 20FC LIGHTING CONTROL PANEL - REFER TO LIGHTING CONTROL PANEL DETAIL FOR ADDITIONAL INFORMATION AND WORK REQUIREMENTS. VARIABLE SPEED DRIVE MOTOR CONTROLLER - (REFER TO SPECIFICATIONS SECTION 262911). LIGHTING CONTROLS SYSTEM GENERAL NOTES: WIRING TERMINATIONS 120V-1Ø OR 277V-1Ø (AS REQUIRED) MANUAL MOTOR STARTER WITH INTEGRAL OVERLOAD PROTECTION 1. ALL COMPONENTS FOR OCCUPANCY AND DAYLIGHT HARVESTING SYSTEM SHALL BE FROM A SINGLE MANUFACTURER AND UL LABELED. 120V-1Ø OR 277V-1Ø (AS REQUIRED) MOTOR STARTER COMPLETE WITH INTEGRAL OVERLOAD PROTECTION AND "HAND-OFF-AUTO" JUNCTION BOX, CEILING OR WALL MOUNTED, 4" SQ. WITH GROUND LUG, UNLESS OTHERWISE NOTED. COORDINATE MOUNTING LOCATION 2. SENSORS (OCCUPANCY/VACANCY, DAYLIGHT HARVESTING, ETC.) MAY BE STAND ALONE, COMBINATION, OR INTEGRATED WITH LIGHTING FIXTURES. SELECTOR SWITCH. WITH EQUIPMENT AND MOUNTING HEIGHT WITH ARCHITECT. CONNECT PER MANUFACTURER'S WIRING DIAGRAMS. L - PATIENT LIFT SYSTEM. 3. PROVIDE ALL ADDITIONAL COMPONENTS NECESSARY FOR COMPLETE SYSTEM PER MANUFACTURER'S REQUIREMENTS. 120V-1Ø OR 277V-1Ø (AS REQUIRED) LOCKABLE MANUAL SWITCH (NO THERMAL OVERLOADS). SC - SINK STATION CONTROLS. CP - MECHANICAL EQUIPMENT CONTROL PANEL. 4. SUBMIT WIRING DIAGRAMS SHOWING COMPLETE LIGHTING CONTROLS CONNECTIONS TO ENGINEER FOR REVIEW WITH SHOP DRAWINGS. VAV - VARIABLE AIR VOLUME TERMINALS. SEE PLANS FOR ADDITIONAL WORK INFORMATION AND WORK REQUIREMENTS. CONTROLLER FURNISHED WITH EQUIPMENT. TCP - TEMPERATURE CONTROL PANEL. FURNISHED AND INSTALLED BY MC. EC SHALL PROVIDE 120V CONNECTION (HARDWIRED OR RECEPTACLE, AS REQUIRED) HD - ELECTRIC HAND DRYER. TC - TOILET FLUSH CONTROL SECURITY SYSTEM LEGEND PT - ELECTRONIC PAPER TOWER DISPENSER. AD - AUTOMATIC DOOR. JUNCTION BOX ABOVE CEILING. EC SHALL CONNECT AUTOMATIC DOOR INCLUDING PUSH PAD WIRING DEVICES OPERATORS PER MANUFACTURER'S INSTRUCTIONS TO 120V CIRCUIT. GC SHALL FURNISH AND INSTALL AUTOMATIC DOOR. WC - ELECTRIC WATER COOLER. CONNECT TO 120V, 20A-1P CIRCUIT, WALL MOUNTED, COORDINATE HEIGHT WITH MC. SECURITY CAMERA - FIXED DOME CAMERA - CEILING MOUNTED, VARIFOCAL, 80° - 22° VIEWING ANGLE RANGE, NETWORK-ENABLED, 20A-125V, HOSPITAL GRADE, GROUNDED SINGLE RECEPTACLE, MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. JUNCTION BOX MOUNTED AT 48" AFF FOR CONNECTION TO AUTOMATIC DOOR PUSH PAD DEVICE. PROVIDE 3/4"C TO DOOR 1280 X 800 (1MP) RESOLUTION, H.264 VIDEO COMPRESSION, 30 FRAMES PER SECOND, TAMPERING ALARM, POWER OVER ETHERNET, PROGRESSIVE SCAN, TAMPER RESISTANT CASING. PROVIDE DROP CEILING MOUNTING ACCESSORIES TO MOUNT DOME FLUSH WITH CONTROLLER WITH WIRING PER MANUFACTURER'S REQUIREMENTS. 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. CEILING. DIRECTIONAL ARROW(S) INDICATE GENERAL DIRECTION OF CAMERA'S FIELD OF VIEW. MOTOR - NUMBER DENOTES HORSEPOWER ACCESS CONTROLLED DOOR TYPE 1 - SINGLE DOOR WITH ELECTRIFIED LOCKSET AND HARD-WIRED CARD READER. REFER TO "ACCESS 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 68" AFF FOR TELEVISION UNLESS OTHERWISE NOTED. CONTROLLED DOOR TYPE 1 DETAIL". COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS. 20A-125V, HOSPITAL GRADE, GROUNDED TAMPER RESISTANT RECEPTACLE, MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. ACCESS CONTROLLED DOOR TYPE 2 - DOUBLE DOOR WITH AUTOMATIC DOOR OPERATOR, HARD-WIRED CARD READER, INTERCOM STATION, PUSH PLATES, REQUEST-TO-EXIT MOTION SENSOR, AND ELECTRIC LATCH RETRACTION. REFER TO "ACCESS CONTROLLED DOOR TYPE 2 DETAIL". FIRE ALARM SYSTEM LEGEND DOUBLE 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. ACCESS CONTROLLED DOOR TYPE 3 - SINGLE DOOR WITH HARD-WIRED CARD READER, ELECTRIFIED LOCKSET, PUSH PLATES, AND AUTOMATIC DOOR OPERATOR. REFER TO "ACCESS CONTROLLED DOOR TYPE 2 DETAIL". 20A-125V, HOSPITAL GRADE, GROUND FAULT INTERRUPTER RECEPTACLE, MOUNT AT 18" AFF UNLESS OTHERWISE NOTED. FIRE ALARM CONTROL PANEL (TYPE AS INDICATED ON PLANS). ACCESS CONTROLLED DOOR TYPE 4 - DOUBLE DOOR WITH HARD-WIRED CARD READER, ELECTRIFIED LOCKSET, PUSH PLATES, AND AUTOMATIC DOOR OPERATOR. REFER TO "ACCESS CONTROLLED DOOR TYPE 2 DETAIL". FIRE ALARM REMOTE ANNUNCIATOR - FLUSH MOUNT AT 5'-0" AFF TO TOP OF DEVICE. SAME DEVICE TYPES AS INDICATED ABOVE EXCEPT CONNECTED TO EMERGENCY CRITICAL CIRCUIT. SECURITY SYSTEM - DURESS-PANIC ALARM PUSHBUTTON - MOUNTED TO UNDERSIDE OF DESK/COUNTER, VERIFY EXACT LOCATION FIRE ALARM POWER SUPPLY EXTENDER - CONNECT TO 120V CIRCUIT. SURFACE MOUNT AT 5'-0" AFF TO TOP OF DEVICE. WITH VA POLICE PRIOR TO ROUGH-IN. FURNISHED AND CONNECTED BY CONTRACTOR. SECURITY SYSTEM - INTERCOM DESKTOP MASTER STATION - STENTOFON IP DESKTOP STATION WITH VIDEO DISPLAY AND HANDSET -8.86"H x 6.73"W x 8.31"D, ACTIVE NOISE FILTERING, ACOUSTIC ECHO CANCELLATION, OPEN DUPLEX AUDIO, 1.5W SPEAKER, FIRE ALARM TERMINAL CABINET. CENTRALIZED MONITORING, LED STATUS LIGHT, 3.5" LCD SCREEN WITH 320 x 240 RESOLUTION, RJ45 POE ETHERNET CONNECTION, ABBREVIATIONS STENTOFON CCoIP PROTOCOL, SIP PROTOCOL. MASTER STATION SHALL RECEIVE VIDEO CALL FROM IP VIDEO STATION AND ALLOW NOTIFICATION APPLIANCE CIRCUIT EXTENDER RESPONSE AND REMOTE DOOR RELEASE. ABOVE COUNTER AT 9" UNLESS OTHERWISE NOTED ABOVE FINISHED CEILING SECURITY SYSTEM - INTERCOM STATION - STENTOFON IP VANDAL RESISTANT VIDEO STATION - 9.75"h x 5.5"W x 1.7"D STAINLESS MANUAL FIRE ALARM PULL STATION - MOUNT AT 48" AFF TO CENTERLINE OF DEVICE. STEEL HOUSING, ALUMINUM FRONTPLATE, IP65 RATED PROTECTION TO FRONT, -20°C TO 55°C OPERATING TEMPERATURE, DAY/NIGHT AMP FRAME COLOR IMAGE SENSOR WITH 640x480 VIDEO RESOLUTION, RJ45 POE ETHERNET CONNECTION, STENTOFON CCoIP PROTOCOL, SIP FIRE ALARM VISUAL SIGNAL DEVICE (ADA TYPE) MOUNTED 80" AFF UNLESS NOTED. RED HOUSING WITH WHITE "FIRE" LETTERING. PROTOCOL, RECESSED MOUNTED AT LOCATION AS INDICATED ON PLANS. INTEGRAL, MICROPHONE, COMMUNICATIONS SPEAKER, ABOVE FINISHED FLOOR AUTOMATIC TRANSFER SWITCH AND CALL BUTTON. REFER TO SECURITY RISER DIAGRAM DRAWING FOR ADDITIONAL INFORMATION. VERIFY EXACT LOCATION AND PROGRAMMING WITH VA POLICE. CONTRACTING OFFICER'S REPRESENTATIVE CEILING MOUNTED FIRE ALARM AUDIBLE VISUAL (SPEAKER/STROBE) SIGNAL DEVICE (ADA TYPE) MOUNTED 80" AFF UNLESS NOTED. RED HOUSING WITH CARD READER - PROVIDE CARD READER AT ALL ACCESS CONTROLLED DOORS. REFER TO DETAILS FOR TYPICAL INSTALLATION REQUIREMENTS. INSTALL CARD READER AT CR LOCATION IN LIEU OF TYPICAL DETAILS WHEN SHOWN. WHITE "FIRE" LETTERING. EXISTING LEARNING EXCHANGE DEVICES ARE HORN/STROBE IN LIEU OF AUDIO SPEAKER. ELECTRICAL CONTRACTOR EQUIPMENT GROUND EWC/WC ELECTRIC WATER COOLER / WATER COOLER END OF LINE SMOKE DETECTOR - ADDRESSABLE INTELLIGENT PHOTOELECTRIC TYPE - CEILING MOUNTED. SECURITY SYSTEM NOTES: GENERAL CONTRACTOR GROUND FAULT CIRCUIT INTERRUPTER DUCT DETECTOR - ADDRESSABLE INTELLIGENT PHOTOELECTRIC DETECTOR, SAMPLING TUBES AND PROGRAMMABLE RELAY BASE. S1. PROVIDE MINIMUM SIZE BACKBOX AS REQUIRED FOR ALL OF THE ABOVE SECURITY DEVICES AND INSTALL IN 3/4"C MINIMUM COMPLETE CONDUIT PROVIDE DUCT DETECTOR TEST/RESET SWITCH RS WITH REMOTE INDICATOR LAMP FOR EACH DUCT DETECTOR. (TEST SWITCH ISOLATED GROUND INFORMATION RESOURCES MANAGEMENT SYSTEM TO JUNCTION BOX ABOVE FINISHED CEILING. MAY NOT BE SHOWN ON PLANS) MECHANICAL CONTRACTOR MAIN CIRCUIT BREAKER S2. REFER TO SPECIFICATIONS DIVISION 28 FOR FURTHER DETAILS REGARDING THE SECURITY SYSTEM. MAGNETIC TYPE DOOR HOLDER OUTLET. 24VDC NATIONAL ELECTRICAL CODE MAIN LUGS ONLY S3. MOUNT DEVICES AT MOUNTING HEIGHTS LISTED ABOVE UNLESS OTHERWISE NOTED ON THE FLOOR PLANS. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL ELEVATIONS. SURFACE MOUNTED PNEUMATICALLY ACTUATED COMBINATION SMOKE/FIRE DAMPER - FURNISHED AND INSTALLED BY THE MC. EC SHALL PROVIDE (1) CONTROL MODULE AND (1) MONITOR MODULE S4. ALL SECURITY SYSTEM ROUGH-INS, CONDUIT, WIRING AND EQUIPMENT/DEVICES SHALL BE PROVIDED BY CONTRACTOR. TELECOMMUNICATIONS CONTRACTOR TEMPERATURE CONTROLS CONTRACTOR S5. CONTRACTOR SHALL VERIFY ALL BACKBOX SIZES WITH VA COR AND MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN. CONTROL MODULE - ADDRESSABLE RELAY FOR CONTROL OF SMOKE DAMPERS, ELEVATOR RECALL, MAGNETIC DOOR HOLDERS, TELECOMMUNICATIONS ROOM UNLESS OTHERWISE NOTED AUTOMATIC DOORS, ETC. S6. FURNISH, INSTALL AND CONNECT ALL SECURITY DEVICES IN ACCORDANCE WITH LENEL SYSTEM PROVIDER. PROVIDE ALL ADDITIONAL LENEL UNVERSAL (120 - 277V) COMPONENTS AS NECESSARY FOR A COMPLETE SYSTEM. SUBMIT ALL LENEL DEVICES WITH SHOP DRAWINGS SUBMITTAL. MONITOR MODULE - ADDRESSABLE SUPERVISED FOR MONITORING TAMPER SWITCH, FLOW SWITCH, DAMPER POSITION ETC. VARIABLE SPEED DRIVE MOTOR CONTROLLER WEATHERPROOF ENCLOSURE - NEMA 4 TYPE EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. - TO REMAIN TAMPER SWITCH - MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL TAMPER SWITCH. ELECTRICAL CONTRACTOR SHALL GENERAL LEGEND PROVIDE MONITOR MODULE AND TEST SWITCH. INDICATES EXISTING OUTLET, LIGHTING FIXTURE, CONDUIT, ETC - TO BE REMOVED. PROVIDE BLANK COVER FOR OUTLET AND MAINTAIN CIRCUIT FLOW SWITCH - MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL FLOW SWITCH. ELECTRICAL CONTRACTOR SHALL PROVIDE CODED NOTE - "1" INDICATES NOTE NUMBER. REINSTALL EXISTING CEILING MOUNTED DEVICE IN NEW CEILING AND RECONNECT COMPLETE. 1-SF MECHANICAL EQUIPMENT IDENTIFIER NEW LOCATION OF EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. FIRE ALARM SYSTEM NOTES EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. - TO BE REPLACED WITH NEW OF SPECIFIED TYPE DETAIL REFERENCE - "1" INDICATES DETAIL NUMBER, "1-E01" INDICATED DRAWINGS NUMBER. F1: ALL FIRE ALARM SYSTEM DEVICES SHALL BE CONNECTED COMPLETE TO THE MAIN FIRE ALARM SYSTEM CONTROL PANEL IN ACCORDANCE WITH EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. - TO BE REMOVED COMPLETE- MAINTAIN CIRCUIT CONTINUITY TO ADJACENT ENGINEER APPROVED MANUFACTURER'S SHOP DRAWING WIRING DIAGRAMS AND DETAILS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING OUTLETS. EXTEND CONDUIT AND WIRING AS REQUIRED. A FULLY CODE COMPLIANT FIRE ALARM SYSTEM. DEVICES SHOWN ON PLAN ARE FOR REFERENCE ONLY. EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. - TO BE REMOVED AND REINSTALLED AT NEW LOCATION - EXTEND CONDUIT AND WIRING AS F2: PROVIDE A 2-GANG MINIMUM SIZE BACKBOX FOR ALL OF THE ABOVE FIRE ALARM DEVICES. COLUMN GRID (RR)F3: ALL FIRE ALARM SYSTEM CONDUCTORS SHALL BE INSTALLED IN 3/4" MINIMUM SIZE COMPLETE CONDUIT SYSTEM WITH COLOR CODED WIRING AS VAMC VETERANS AFFAIRS MEDICAL CENTER INDICATED ON SHOP DRAWINGS - MAINTAIN FACILITY COLOR CODING. F4: ALL NETWORK AND NETWORK CABLES SHALL BE "COMMUNICATION GRADE" TYPE CABLE. F5: FURNISH, INSTALL AND CONNECT ALL FIRE ALARM DEVICES IN ACCORDANCE WITH WIRING DIAGRAMS PREPARED BY SYSTEM VENDOR REVISION REFERENCE NUMBER F6: EXISTING FIRE ALARM SYSTEM BY NOTIFIER. REFER TO SPECIFICATIONS SECTION 283100 FOR ELECTRICAL REQUIREMENTS. Drawing Title Project Title **ARCHITECT: CONSULTANTS: ELECTRICAL LEGEND SCI OUTPATIENT CLINIC ADDITION** REDRICK, FREDRICK & HELLER 100 West 9th Street Cleveland, OH 44113-1003 ENGINEERS, INC. INSTRUMENTS OF SERVICE ARE GIVEN IN CONFIDENCE AND REMAIN THE PROPERTY OF 216-875-0100/ (F) 216-875-0111 |Approved: 672 EAST ROYALTON ROAD PERSPECTUS ARCHITECTURE. THE USE OF THIS DESIGN AND THESE CONSTRUCTION DOCUMENT barberhoffman.com **VAMC - WADE PARK** BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9696 PROJECT NAMED HEREIN IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF BARBER & HOFFMAN, INC. 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Department of **Veterans Affairs**

Office of

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		LIGH	HTING FIXTURE	SCHEDULE	-								
TYPE MARK	CLASSIFICATION	DESCRIPTION	MOUNTING	LAMP QUANTITY	LAMP TYPE	LAMP WATTAGE	COLOR TEMP	BALLAST QTY	BALLAST/DRIVER(S)	VOLTAGE	MAX SYS LOAD	MANUFACTURER	MODEL
ΑH	LED TROFFER	2' x 4' x 3-1/4"H, DIEFORMED 20-GAUGE COLD-ROLLED STEEL HOUSING AND ENDS, HIGH PERFORMANCE LED DRIVER, DRIVER IS FULLY ACCESSIBLE FROM BELOW THE CEILING, EXTRUDED ALUMINUM FRAME, L90 RATING OF AT LEAST 100,000 HOURS, MINIMUM 3721 LUMENS, 100 LUMENS PER WATT EFFICACY, CRI: 83, R9:7, HPR-A (ANGLED), HIGH REFLECTANCE BACKED MATTE WHITE ENAMEL FINISH, FUSING.	LAY-IN GRID	1	LED	69 W	4000 K	1	LED 0-10V DIMMING	UNV	69 W	FINELINE OR EQUAL	HPR SERIES OR EQUAL
A L	LED TROFFER	2' x 4' x 3-1/4"H, DIEFORMED 20-GAUGE COLD-ROLLED STEEL HOUSING AND ENDS, HIGH PERFORMANCE LED DRIVER, DRIVER IS FULLY ACCESSIBLE FROM BELOW THE CEILING, EXTRUDED ALUMINUM FRAME, L90 RATING OF AT LEAST 100,000 HOURS, MINIMUM 3721 LUMENS, 100 LUMENS PER WATT EFFICACY, CRI: 83, R9:7, HPR-A (ANGLED), HIGH REFLECTANCE BACKED MATTE WHITE ENAMEL FINISH, FUSING.	LAY-IN GRID	1	LED	35 W	4000 K	1	LED 0-10V DIMMING	UNV	35 W	FINELINE OR EQUAL	HPR SERIES OR EQUAL
AΜ	LED TROFFER	2' x 4' x 3-1/4"H, DIEFORMED 20-GAUGE COLD-ROLLED STEEL HOUSING AND ENDS, HIGH PERFORMANCE LED DRIVER, DRIVER IS FULLY ACCESSIBLE FROM BELOW THE CEILING, EXTRUDED ALUMINUM FRAME, L90 RATING OF AT LEAST 100,000 HOURS, MINIMUM 5928 LUMENS, 100 LUMENS PER WATT EFFICACY, CRI: 83, R9:7, HPR-A (ANGLED), HIGH REFLECTANCE BACKED MATTE WHITE ENAMEL FINISH, FUSING.	LAY-IN GRID	1	LED	56 W	4000 K	1	LED 0-10V DIMMING	UNV	56 W	FINELINE OR EQUAL	HPR SERIES OR EQUAL
3L	LED TROFFER	2' x 2' x 3-1/4"H, DIEFORMED 20-GAUGE COLD-ROLLED STEEL HOUSING AND ENDS, HIGH PERFORMANCE LED DRIVER, DRIVER IS FULLY ACCESSIBLE FROM BELOW THE CEILING, EXTRUDED ALUMINUM FRAME, L90 RATING OF AT LEAST 100,000 HOURS, MINIMUM 3460 LUMENS, 100 LUMENS PER WATT EFFICACY, HPR-A (ANGLED), HIGH REFLECTANCE BACKED MATTE WHITE ENAMEL FINISH, FUSING.	LAY-IN GRID	1	LED	25 W	4000 K	1	LED 0-10V DIMMING	UNV	37 W	FINELINE OR EQUAL	HPR SERIES OR EQUAL
)	LED WALL	4-0'L X 10'W X 2.75"H AT BASE" WALL-MOUNTED LED LIGHT, EXTRUDED ALUMINUM LOW-PROFILE HOUSING, PLANAR LIGHT GUIDE TECHNOLOGY UTILIZING EDGE-LIT PANEL, L70 RATING OF AT LEAST 50,000 HOURS, MINIMUM 4100 LUMENS, 90 LUMENS PER WATT EFFICACY MINIMUM, 3-STEP MACADAM ELLIPSE LED BINNING, 75% DOWNLIGHT/25% UPLIGHT, 0-10V STANDARD DIMMING, FUSING, MATTE WHITE POLYESTER POWDER COAT FINISH.	WALL	1	LED	46 W	4000 K	1	LED 0-10V DIMMING	277V	46 W	CORELITE OR EQUAL	
=	LED WALL STRIP	4-0'L X 10'W X 2.75"H AT BASE" WALL-MOUNTED LED LIGHT, NARROW LED LENSED STRIPLIGHT, DIEFORMED COLD ROLLED STEEL, 72,000 HOURS AT 70% LUMEN OUTPUT.	WALL	1	LED	50 W	4000 K	1	LED 0-10V DIMMING DRIVER	UNV	50 W	METALUX OR EQUAL	
3	LED WALL	2-0'L x 4-3/4"Hx5-9/16"D PAINTED, PLATED COLD-ROLLED STEEL, ALUMINUM BODY WITH AN EXTRUDE MATTE WHITE ACRYLIC DIFFUSER, INTERIOR WALL LUMINAIRE, SQUARE VANITY.	WALL	1	LED	17 W	4000 K	1	LED 0-10V DIMMING	UNV	32 W	CORELITE OR EQUAL	
4	LED WALL	6-5/8"L X 8"H X 4"D WALL MOUNTED LED FIXTURE, DIE CAST ALUMINUM HOUSING, POWER COAT FINISH, 30W LED MODULE, POLYCARBONATE LENS, UL-924 AND UL-1568 LISTED, WET LOCATION LISTED.	WALL	1	LED	30 W	5000 K	1	LED 0-10V DIMMING DRIVER	UNV	30 W		
-	LED DOWNLIGHT	6" DIA. X 7" MAX HEIGHT RECESSED DOWNLIGHT, 1500 MINIMUM LUMENS, SEMI-SPECULAR CLEAR REFLECTOR AND WHITE POLYME TRIM, LED BOARD AND DRIVER ACCESSIBLE FROM BELOW THROUGH FIXTURE, CONVEX TRANSITIONAL LENS. REFLECTOR AND WHITE POLYMER TRIM, MOUNTED IN LAY-IN GRID CEILING.	R LAY-IN GRID	1	LED	26 W	4000 K	1	LED 0-10V DIMMING	UNV	26 W		
M	LED DOWNLIGHT	6" DIA. X 7" MAX HEIGHT RECESSED WALL WASH DOWNLIGHT, 1500 MINIMUM LUMENS, HIGH REFLECTANCE WHITE KICKER REFLECTOR AND WHITE POLYMER TRIM,0-10V DIMMING LED DRIVER, L70 AT 50,000 HOURS. LED BOARD AND DRIVER ACCESSIBLE FROM BELOW. MOUNTED IN LAY-IN GRID CEILING.	LAY-IN GRID	1	LED	21 W	4000 K	1	LED 0-10V DIMMING	UNV	21 W		
N	FLUORESCENT PENDANT	20" DIA X 8"H PENDANT MOUNTED FLUORESCENT LIGHT FIXTURE, CIRCULAR DRUM SHADE, RIGID STEM, MOUNTED IN GYPSUM CEILING.	GYPSUM	4	CFL	32 W	4000 K	1	PROGRAMMED START	277V	128 W	TECH LIGHTING OR EQUAL	TOPO OR EQUAL
ס	LED PENDANT	24" DIA X 11.8"H, PENDANT MOUNTED SEMI-FLUSH DRUM LED LIGHT FIXTURE, 0-10V DIMMING LED DRIVER, MOUNTED IN GYPSUM CEILING.	GYPSUM	1	LED	29 W	4000 K	1	LED 0-10V DIMMING DRIVER	277V	29 W	ADVENT OR EQUAL	NOVATO OR EQUAL
3	WALL SCONCE	8"W X 4"D X 14"H, WALL MOUNTED FLOUORESCENT LIGHT, DECORATIVE BRANCH LASER CUT PATTERN SHADE.	WALL	2	CFL	13 W	4000 K	1	PROGRAMMED START	UNV	26 W	STONEGATE DESIGNS OR EQUAL	
Γ	LED DOWNLIGHT	6" DIA. X 7" MAX HEIGHT RECESSED DOWNLIGHT, 1500 MINIMUM LUMENS, SEMI-SPECULAR CLEAR REFLECTOR AND WHITE POLYME TRIM, LED BOARD AND DRIVER ACCESSIBLE FROM BELOW THROUGH FIXTURE, WET LISTED, IP66 RATED WITH GASKETED LENS, CONVEX TRANSITIONAL LENS. REFLECTOR AND WHITE POLYMER TRIM, MOUNTED IN LAY-IN GRID CEILING.	R LAY-IN GRID	1	LED	26 W	4000 K	1	LED 0-10V DIMMING	UNV	26 W		
N	LED "IN USE" LIGHT	120V AC INPUT, UNIVERSAL MOUNTING, SINGLE FACE, DIECAST ALUMINUM HOUSING 1/8" THINCK MINUM WITH WHITE FINISH, RED STENCIL LETTERS ON WHITE FACE - "IN USE".	WALL	1	LED	2 W	4000 K	1	LED DRIVER	UNV	2 W		

GENERAL LIGHTING INSTALLATION NOTES

L6. REFER TO ELECTRICAL SPECIFICATIONS FOR LED COLOR TEMPERATURE AND DRIVER TYPE.

L1.REFER TO ELECTRICAL SPECIFICATIONS FOR FLUORESCENT LAMP COLOR AND BALLAST TYPE. L2. CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE TYPE (GRID OR FLANGE) WITH ACTUAL CEILING TYPE PRIOR TO ORDERING FIXTURES. CONTACT ENGINEER IF QUESTIONS SHOULD ARISE

L3. CONTRACTOR SHALL VERIFY ALL BALLAST QUANTITIES WITH SWITCHING SHOWN ON PLANS PRIOR TO ORDERING FIXTURES. ADJUST BALLAST QUANTITIES AS REQUIRED TO MATCH SWITCHING. L4. VERIFY LIGHTING CIRCUIT VOLTAGE (277V-1 PHASE OR 120V-1 PHASE) PRIOR TO ORDERING LIGHTING FIXTURES OR STARTING ROUGH-IN OF BRANCH CIRCUITS. IMMEDIATELY CONTACT ENGINEER WITH ANY DISCREPANCIES. CONTRACTOR IS RESPONSIBLE FOR ORDERING THE PROPER VOLTAGE FOR LIGHTING FIXTURES, REGARDLESS OF VOLTAGE SHOWN ON LIGHTING FIXTURE SCHEDULE. L5. CONTRACTOR SHALL VERIFY ALL FIXTURES TO BE CONTROLLED BY DIMMER SWITCHES AS SHOWN ON PLANS PRIOR TO ORDERING FIXTURES. PROVIDE ARCHITECTURAL DIMMING BALLASTS (FLUORESCENT) OR DRIVER (LED) WITH DIMMING RANGE FROM AS SHOWN TABLE ABOVE, AND COMPATIBLE DIMMER CONTROLS WHERE DIMMING IS INDICATED ON PLANS.

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Drawing Title

LIGHTING FIXTURE SCHEDULE SCI OUTPATIENT CLINIC **ADDITION** ||Approved:

	541-CSI-102	Office of
	Building Number 1	Facilities
	Drawing Number	Management
1	1-E0.2	Department of

VAMC - WADE PARK Checked MPL TWM 02/23/15 Dwg. of

Project Title